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CONFERENCE ABSTRACTS

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Oral Communications

OC1.1

INTERPOLAR–PROTOCOL OF A PROSPECTIVE, INTERVENTIONAL STUDY TO IMPROVE MEDICATION THERAPY SAFETY IN HEALTHCARE

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Background: Medication reviews by clinical pharmacists are an important measure of medication safety in hospital settings. However, staff resources for extended medication analyses are often limited. The increasing use of electronic health records (EHRs) in hospitals offer new opportunities to identify patients at increased risk of adverse drug events (ADEs).
Aim: The INTERPOLAR intervention implements an IT tool based on EHR data to prioritise patients for clinical pharmacy interventions in German hospitals. The primary aim of the evaluation is to examine the effect of the intervention on the resolution of medication-related problems (MRPs) under the conditions of the intervention versus care as usual.
Method: INTERPOLAR is a prospective, multicentre stepped-wedge cluster-randomised trial, in which hospital wards are the unit of randomisation. A total of 48 wards (6 wards in each of 8 hospitals) are available for randomisation. All adult patients receiving care on the INTERPOLAR wards are included. Under the stepped-wedge design, all clusters will eventually receive the intervention but are randomised to start at different time points. The primary endpoint will be measured at pre-specified intervals during control and intervention phases, enabling the comparison of MRP-resolution rates with and without access to the intervention.
Results: The primary endpoint is an MRP, which is present if there is a serious contraindication assessed as clinically relevant or a comparably serious problem (e.g. dosing problem, application problem, medication not urgently indicated). Secondary endpoints comprise the estimation of the cohort prevalence of MRPs, analysis of the profiles of MRPs that have occurred, analysis of the profiles of resolved MRPs, predictability of MRPs (regression models), identification of ADEs using algorithmisable classifiers, and cost of recording and resolving MRPs in routine care. The first results of the study are expected in 2026.
Conclusion: INTERPOLAR will be the first large-scale interventional study in Germany to examine whether medication safety in the inpatient setting can be improved through IT-based processing of case data by providing ward pharmacists with an IT tool for medication analysis that makes it easier for them to search for and identify patients with a suspected MRP.

OC1.3

IMPACT OF PHARMACIST-LED HOSPITAL BASED INTERVENTION ON PATIENT-DRIVEN MEDICATION DISCREPANCIES AFTER HOSPITAL DISCHARGE

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Background: Pharmacist-led medication reconciliation can significantly reduce the risk of clinically important medication errors at hospital discharge (1), while there is scarce information on its impact on patients' medication management after hospital discharge, including patient-driven medication discrepancies.
Aim: The aim of the study was to evaluate the incidence of medication discrepancies caused by patients 30 days after hospital discharge and to investigate the effect of the medication reconciliation with patient counselling on clinically important intentional and unintentional medication discrepancies made by patients.
Method: A pragmatic, prospective, controlled clinical trial was conducted at the University Clinic Golnik, Slovenia. Adults medical patients were allocated into the intervention or control (standard care) group. Intervention included a pharmacist-led medication reconciliation at admission and discharge and patient counselling at hospital discharge. Medication discrepancies were determined by comparing the therapy 30 days after discharge, obtained by a patient telephone interview, with the therapy in the discharge letter. The discrepancies made by the patients were classified as intentional or unintentional; furthermore, their clinical importance was assessed.
Results: The study included 254 patients, 136 in the intervention group and 118 in the control group. Their median age was 71 years,

57.9% were male, and the median number of medications at discharge was 7. Thirty days after hospital discharge 617/2441 medications (25.3%) had discrepancies. Patients made 171 (27.7%) discrepancies intentionally and 152 (24.6%) unintentionally, while physicians accounted for the remaining 294 (47.7%). Among the unintentional discrepancies made by patients, 45.4% were clinically important. The intervention significantly reduced the odds for clinically important unintentional discrepancies, OR 0.204 (95%CI: 0.093–0.448). No other factors included in the model had a statistically significant effect. Regarding intentional discrepancies made by patients, 18.7% were clinically important. They were more common among younger, male patients and those hospitalized due to a respiratory disease. However, the intervention did not have any statistically significant effect on them, OR 2.525 (95%CI: 0.843–7.563).
Conclusion: The study highlights the importance of addressing discrepancies made by patients after hospital discharge to enhance medication safety and effectiveness. Our findings demonstrate that a pharmacist-led medication reconciliation with patient counselling at hospital discharge can significantly reduce unintentional medication discrepancies made by patients 30 days after discharge.

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OC1.4

DEVELOPMENT OF A TIME-EFFICIENT RISK-ADAPTED QUESTIONNAIRE FOR OPTIMIZING MEDICATION RECONCILIATION AT HOSPITAL ADMISSION

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Background: Standardized medication reconciliation during hospital admission plays an essential role in the prevention of medication errors by reducing discrepancies in the medication history of patients. However, time constraints are often cited as a recurring challenge for its application.
Aim: To identify and classify discrepancies and to reduce them in a time-efficient manner during medication reconciliation at hospital admission by developing a questionnaire based on frequently occurring and clinically relevant omissions. A three-phase approach was used in adult patients with ≥ 5 preadmission drugs admitted to a 971-bed hospital.
Method: I) Prospective observational: Healthcare providers were observed performing medication reconciliation at admission. II) Prospective observational: Unintentional discrepancies were identified at admission on inpatient wards. Clinical relevance and inter-rater reliability were assessed. Predictors of discrepancies were identified using logistic and negative binomial regression. III) Interventional: A questionnaire, developed using the prevalence and clinical relevance of omissions identified in study II, was tested against standard care at the emergency department. The questionnaire was optimized using prevalence and clinical relevance of identified omissions.
Results: I) The process of medication reconciliation at admission lacks standardization, II) resulting in unintentional medication discrepancies in 178 of 300 included patients (59%). 56% of these discrepancies were categorized as presenting a medium to high risk of potential harm (Fleiss' kappa = 0.48). Omission was the most common and clinically relevant type of discrepancy. Female gender ($p = 0.037$) and a higher number of preadmission drugs ($p < 0.001$) showed an increased risk of discrepancies. The use of multiple information sources ($p < 0.001$) and accurately documenting the medication history in the electronic prescription system ($p = 0.028$) were confirmed to be valuable in identifying discrepancies. III) The questionnaire based on omissions identified discrepancies in 103 of 153 included patients (67%) and was optimized into a three-minute list targeting frequently occurring and clinically relevant omissions.
Conclusion: This study highlights the prevalence and clinical relevance of unintentional medication discrepancies in the medication history of patients upon admission. The questionnaire focusing on frequently occurring and clinically relevant omissions is an effective tool to apply during the medication reconciliation process for adult patient populations taking at least five preadmission drugs.
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OC1.5

AUGMENTED RESILIENCE: BEST PRACTICE IN SUSTAINABLE DEVELOPMENT OF COMMUNITY PHARMACISTS

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Background: Healthcare professionals increasingly face burnout and the second victim phenomenon of adverse outcomes. Post-COVID-19 global guidelines advocate the development of soft skills for improved resilience. In Serbia, a multi-professional team developed the best educational program, "Galenika Academy", for sustainable pharmaceutical practice.
Aim: The "Galenika Academy" aimed to develop pharmacists' soft skills aligned with the International Pharmaceutical Federation—FIP Framework to foster personal and business resilience. It consists of different types of health education to enhance safety for professionals and patients, targeting Serbia's community pharmacy staff during work hours.
Method: The Faculty of Pharmacy, the Association for Continuous Pharmacists Education—EduMed and Galenika a.d. collaborated on an educational project. This training program is aligned with healthcare educational standards and legal requirements. The content, developed following extensive literature reviews, was validated by pharmacy professors, professional experts, educators, and human resources professionals and accredited by Serbia's National Health Council. It was implemented via free-of-charge webinars on EduMed's platform and evaluated through accredited tests' success rates, participant statistics, and a three-level Kirkpatrick Model assessment.
Results: From February 2021 to the end of 2023, "Galenika Academy" conducted 25 tailored webinars and 15 accredited tests via an online platform. Topics included "Pharmacy as a Business System", "Time Management", "Team Management", "Business Negotiation", "Performance Management", "Employee Development", "Decision-Making in Pharmaceutical Practice", "Risk Management", "Communication for Patient Safety", "Research in Practice",

"Ethics and Professionalism", "Pharmacists as Second Victims", "Building Resilience" "Burnout in Pharmacy Practice" and "Establishing Quality and Safety Standards". The program recorded 10,457 webinar visits, with "Pharmacy as a Business System" and " Performance Management" being the most attended. Overall, the tests achieved a remarkable 77% success rate. Participants rated the program highly, with an average satisfaction score of 4.75 out of 5, while 95.77% of respondents reported enhanced competencies, impacting personal and business resilience and sustainability. In addition, 97.65% of participants recommended the program.
Conclusion: The "Galenika Academy" has set a benchmark for sustainable development in community pharmacy by enhancing personal and professional resilience. Recognised as best practice, it effectively addresses secondary victimisation and burnout, significantly enhancing competencies and ensuring sustainable future practices in Serbia's pharmaceutical sector.

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OC1.6

EVALUATION OF CHATGPT AS A SELF MEDICATION PATIENTS' ADVISOR

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Background: Minor ailments are medical conditions that can be self-diagnosed and self-managed with over-the-counter medications after counseling with a pharmacist. Generated ChatGPT self-medication recommendations could enable quick, cost-effective, and trustful information for the patient and hold great promise in improving patients' health outcomes for minor ailments.
Aim: To assess the value of ChatGPT in assisting patients for selecting appropriate self-care and OTC medications in managing minor ailments and to compare between ChatGPT and pharmacist responses in terms of accuracy, specificity, similarity, complexity, and comprehensiveness.
Method: This was an exploratory cross-sectional study. The research team has prepared 42 clinical scenarios of different levels of complexity with standard answers. The clinical scenarios were entered and answered by the ChatGPT (OpenAI 3.0) as well as answered by community pharmacists. Answers from both groups were compared for accuracy, complexity of responses, empathy, and patient-centeredness (as score out of 5), as well as quality/similarity and word count.
Results: Cases were analyzed by two independent blinded clinical experts, it was found that ChatGPT was as accurate as the standard response (4.71 out of 5.00), while more accurate compared to pharmacists' responses (4.71 vs. 3.81; p-value < 0.001). Moreover, ChatGPT has significantly more word count than pharmacists (211.24 vs. 11.93; $p < 0.001$). Empathic responses were found in almost 50.0% of the ChatGPT responses. The mean similarity between community pharmacists and ChatGPT was 0.44 (SD = 0.24), with almost 10.0% of cases being almost similar ($\geq$ 70.0%). Independent t-test and Two-way ANOVA showed significant impact of case complexity on accuracy and patient centeredness.
Conclusion: This study revealed that ChatGPT is a reliable and accurate tool for self-medication of minor ailments. Community pharmacists' skills in minor ailments treatment require continued training.

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OC1.7

EXPLORING HOSPITAL-TO-HOME TRANSITION FOR PATIENTS WITH MULTIPLE LONG-TERM CONDITIONS: HUMAN FACTORS & SYSTEM ENGINEERING APPROACH

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Background: Patients with multiple long-term conditions (MLTCs) encounter difficulties in medication management after hospital discharge. This challenge is exacerbated by the inadequate communication between healthcare sectors. Our study investigates how hospital discharge impacts medication management for patients with MLTCs transitioning back home.
Aim: By employing a human factors and systems engineering approach, this research integrates the perspectives of patients, general practitioners (GPs) and homecare nurses (HCNs) to identify barriers and facilitators in the process.
Method: Semi-structured interviews with 21 patients and focus group interviews involving additional 14 GPs and 10 HCNs were conducted. Home-dwelling patients with MLTCs $\geq$ 18 years using a minimum of 4 medications for a minimum of 2 separate conditions were included from two geriatric wards and one internal medicine ward at a hospital in Oslo, Norway. GPs and HCNs were included from various primary care units in Oslo, Norway. Utilizing the Systems Engineering Initiative for Patient Safety (SEIPS) framework we analyzed work processes and interactions between individuals, tasks, tools, environment, and organizational context.
Results: Managing medications and adjusting medications to patient needs/ your own life were found to be the two key work processes in the results. These processes were shaped by the interaction of the 5 work system elements: individuals, tools, tasks, environments, and organization. Person and technological factors were the most prominent in shaping performance. Patient empowerment was described as a facilitator. However, some GPs described having low trust in the patient being capable of understanding complex medication regimens. While helping adherence, the multidose dispense system was described as a barrier for quick adjustment in medication regimens.

Organizational factors such as time limitation often affect the HCPs priorities when addressing patient needs. Additionally, several medication lists for one patient was a key barrier that hindered optimal information flow between the patient, hospital, and primary care units resulting in outcomes such as increased workload for the HCP and potential medication errors for patients.
Conclusion: This study investigated the intricate hospital to home transition from the patient and HCP perspectives respectively. We discovered facilitators and barriers that could guide the implementation of strategies for a secure hospital to home transition and patient centered medication management for individuals with MLTCs.
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OC1.8

YOUNG PEOPLE'S PERCEPTIONS OF COMMUNITY PHARMACISTS IN ATOPIC DERMATITIS MANAGEMENT: A QUALITATIVE STUDY

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Background: Atopic dermatitis (AD) is a chronic skin condition, presenting in childhood and persisting into adulthood[1]. Understanding AD management of young people (YP) as a transition group is important to enable better long-term management. Community pharmacists (CPs) play a role as front-line providers of treatment[2], but how YP perceive this contribution is unclear.
Aim: To identify YP's perceptions of the contributions of CPs in the management of AD, a qualitative study was conducted in the United Kingdom (UK).
Method: Qualitative data was collected from interviews with YP, diagnosed with AD and aged 18–24, between February and December 2023. Participants were recruited via study posters posted on social media, in public places and university premises. An interview guide was used during interviews. Semi-structured interviews were conducted online or in person. Each interview was recorded, and transcribed verbatim. All transcriptions were coded, and then main themes and subthemes were identified using inductive thematic analysis. Ethical approval for this study was granted by Newcastle University Ethics Committee.
Results: A total of 25 participants (one non-binary, four male, and 20 female) were interviewed. Most participants have had AD since infancy or childhood. After thematic analysis, two themes were identified: i) lack of awareness of what CPs can do, and ii) prescribing authority of CPs may attract more YP. Most participants stated they would go to community pharmacies to only collect their prescriptions or buy medicines, not for advice by CPs. Some participants acknowledged they were not aware that CPs could provide specialist advice. They even stated they would first consult either general practitioners (GPs) or dermatologists, not CPs. Although participants claimed they knew how to manage AD and did not need support with management from the CPs, they would be keen to see CPs once they got prescribing status as most participants believed this status would facilitate their access to healthcare due to the current challenges in making GP appointments.
Conclusion: The findings show that YP with AD are not aware of the expertise of CPs and the contribution they could make to AD management, whereas prescribing authority, which newly registered CPs in the UK will have as of 2026, could make more YP seek support within community pharmacies. Initiatives by healthcare authorities, policy makers and CPs itself, which make CPs' skills and role more prominent and obvious, could be implemented to encourage YP to see CPs.

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OC2.1

INAPPROPRIATE PRESCRIPTION OF DIRECT ORAL ANTICOAGULANTS (DOACS) AT HOSPITAL IN OLDER PATIENTS

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Background: DOACs are associated with frequent adverse drug events. Five years ago, we showed that inappropriate prescription of DOACs were frequent at both hospital admission and discharge[1]. As DOACs are increasingly prescribed, health care professionals should gain expertise in their use. We thus studied the appropriateness prescription of DOACs nowadays.
Aim: The primary objective was to compare the inappropriate prescription of DOACs rates between hospital admission and discharge five years after a first study.
Method: This observational, prospective and multicenter study was conducted from 14th November 2022 to 15th May 2023 in in the same conditions as the first one (duration, patients aged $\geq$ 65 years, treated with DOACs at admission to the same 6 medicine departments). DOACs prescriptions were considered inappropriate when they were not in accordance with the summary of product characteristics. Data were collected by pharmacy students. For descriptive analyses, qualitative variables were expressed as number (%) and quantitative variables as mean [standard deviation]. A McNemar test was performed to compare pair-matched percentages.
Results: A total of 399 patients were included in the final analysis. The mean age was 84 ($\pm$ 14) years and mean weight was 70 kg ($\pm$ 25), and 272 patients (50%) were women. The most prescribed DOACs prior to admission was apixaban (295, 74%), followed by rivaroxaban (88, 22%) and dabigatran (16, 4%). Patients were mainly treated by DOACs for atrial fibrillation (347, 87%), venous thromboembolism (25, 6%) or another indication (27, 7%). Overall, prescription inappropriateness decreased from 133 (33%) at admission to 81 (20%) at discharge ($p < 0.001$). Hospital thus corrected 50% of admission inappropriate prescriptions and generated 6% of inappropriate prescriptions. The main misuse was underdosing which represented 89/133 (64%) of inappropriate prescriptions at admission and 61/81 (75%) at discharge.
Conclusion: We showed no improvement in inappropriate DOACs prescriptions rates compared to Bruneau et al. (33% and 30% at admission and 20% and 22% at discharge). In the same conditions as Bruneau et al. study, the number of DOACs patients dramatically increased (536 vs 157 patients). Despite the widespread of DOACs prescriptions, inappropriate prescriptions remain high. This misuse is associated with higher adverse drug events in older patients. Our study highlights the importance of prescription review and continue education of prescriber and pharmacists.

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OC2.2

PHARMACIST-LED HEART FAILURE DIAGNOSTIC AND GUIDELINE DIRECTED MEDICATION THERAPIES CLINIC

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Background: Timely diagnosis of heart failure (HF) and rapid optimisation of guideline-directed medication therapy (GDMT) improves patients' qualities of life and reduces mortality and morbidity [1]. Many previous papers describe the role of the pharmacist in medication optimisation, but not in the diagnosis of heart failure [2].
Aim: To evaluate the impact of pharmacist-led heart failure clinics on time from referral to heart failure diagnosis, time from diagnosis to first review with a specialist, and proportion of patient's achieving optimisation of GDMT at 180 days following diagnosis.
Method: Two experienced non-medical prescribing pharmacists, one of whom had additional diagnostic qualifications in cardiology, delivered the clinic in a community outpatient clinic in rural West Wales. Patients referred with suspected HF were risk-stratified as needing urgent review within 14 days or routine review within 42 days, based on natriuretic peptide levels. Patients attended the clinic for assessment, including physical examination, electrocardiogram, and echocardiogram. Those with HF with reduced ejection fraction were initiated on drug treatment and referred to the follow up pharmacist led GDMT clinic.
Results: Median time from referral to diagnosis shortened from 61 days (pre-existing service) to 16 days for urgent referrals and 19 days for routine referrals. Median time to first appointment following diagnosis shortened from 54 days (pre-existing service) to 14 days, and proportion of patients' achieving GDMT at 180 days following diagnosis improved from 24% (pre-existing service) to 86%.
Conclusion: This novel one-stop heart failure diagnostic clinic and medication optimisation clinic speeded up time to diagnosis, time to first specialist review, and proportion of patients' achieving GDMT optimisation in a rural healthcare setting.

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OC2.3

SUSTAINABLE PHARMACY PRACTICE: A QUALITATIVE EXPLORATION OF PHARMACIST PRESCRIBING PRACTICES IN RESPIRATORY DISEASE MANAGEMENT

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Background: Sustainable pharmacy practice integrates environmental, economic, and social dimensions to optimise healthcare delivery and long-term viability whilst minimising the environmental impact of prescribing. Increasingly, pharmacists' pivotal role in pharmaceutical care in respiratory disease in general practice may contribute to sustainable pharmacy practice.
Aim: This study aimed to explore the prescribing practices of pharmacists working in a general practice setting in England to manage respiratory diseases, focusing on sustainable practices, using the Theoretical Domains Framework (TDF).
Method: A qualitative study was conducted using semi-structured interviews with independent prescribing pharmacists working in general practice settings in England involved in respiratory disease management. Independent prescribing pharmacists working in a general practice setting were eligible for this study. The interviews explored pharmacists' experiences, decision-making processes, and the perceived impact of their practices on sustainability. Data were analysed thematically using the Theoretical Domains Framework (TDF) to identify key themes and influencing factors. Ethical approval was obtained from the University of Huddersfield.
Results: Eleven pharmacists (five male and six female) participated in interviews. Interviews typically lasted approximately 20 min. The prominent TDF behavioural domains that were found to influence the choice of inhaler therapies prescribed for patients with respiratory diseases such as asthma or chronic obstructive pulmonary disease (COPD) were *knowledge and skills; training; and intentions and motivations.* Participants reported a balance between patient choice and preference of inhaler therapy, concordance with prescribed therapies and national prescribing indicators as key considerations influencing prescribing behaviours. Knowledge regarding a structured approach to manage inhaler prescribing to align with national prescribing indicator targets was inconsistent.
Conclusion: This study provides valuable insights into the sustainable prescribing practices of pharmacists in respiratory disease management in a general practice setting. Findings highlight the significance of knowledge, training, intentions, and motivations in influencing prescribing practices. The identified key behavioural determinants can be mapped to evidence-based behavioural change strategies to develop a more structured approach to interventional development to environmental sustainability in respiratory disease management in a general practice setting in the UK.
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OC2.5

IDENTIFYING RESEARCH PRIORITIES ON TAPERING PSYCHIATRIC MEDICATION USING A PRIORITY SETTING PARTNERSHIP

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Background: Tapering (gradual dosage reduction) is the recommended approach for reducing and/or stopping the use of psychiatric medication to minimise withdrawal symptoms. However, many uncertainties exist regarding the process of reducing and stopping psychiatric medication.
Aim: This study aimed to identify the top ten research priorities on reducing and stopping psychiatric medication that reflect the perspectives and unmet needs of three key stakeholder groups (people with lived experience, family members/carers/supporters, and healthcare professionals).
Method: A Priority Setting Partnership was conducted using the James Lind Alliance's seven-step process. This involved: (i) creating an international Steering Group of key stakeholder representatives and (ii) identifying potential partners; (iii) gathering stakeholders' uncertainties about reducing and stopping psychiatric medication using an online survey and summarising the survey responses; (iv) checking the summary questions against existing evidence and verifying uncertainties; (v) shortlisting the questions using a second online survey; (vi) determining the Top 10 research questions through a prioritisation workshop; and (vii) disseminating the results.
Results: A total of 3,635 questions were collected in the initial survey from 884 respondents of which 32 questions were verified as uncertainties. These questions were then ranked in a second online survey by 526 respondents and the findings discussed in a final prioritisation workshop by 30 participants to produce the final Top 10 list of research questions. These questions cover a range of areas including the most effective ways of safely reducing/stopping psychiatric medication and providing support to individuals undergoing the discontinuation process, as well as the best ways to educate healthcare professionals on this topic.
Conclusion: The Top 10 list of research priorities was produced through extensive engagement with key stakeholders and highlights important uncertainties and gaps in the existing evidence-base that need to be addressed by future research.
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OC2.6

EFFECT OF CYP450 ENZYME POLYMORPHISMS IN PATIENTS WITH CHRONIC HEART FAILURE TAKING BETA BLOCKERS

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Background: Patients with chronic heart failure (CHF) are usually characterized by polypharmacy and the frequent need to optimize treatment. The effectiveness and safety of treatment also depends on the genotype of enzymes involved in the biotransformation of drugs. Currently, less attention is paid to cardiovascular drugs in pharmacogenetics.
Aim: Our aims were: 1) to identify frequently used beta blockers that are significantly biotransformed by the CYP450 enzymes, 2) to evaluate the impact of "actionable" pharmacogenetic variants of CYP450 enzymes on the clinical parameters of patients treated by given beta blockers, including blood pressure and dosage of antihypertensive combinational therapy.
Method: Beta blocker consumption in Slovakia (2019–2023) was expressed as daily defined doses (DDD)/1000 inhabitants. Drug biotransformation data were sourced from DrugBank, Lexicomp, and SmPCs. Variant alleles of CYP450 and their European frequencies were identified using PharmVar, dbSNP, PharmGKB, and CPIC. Seventy-four CHF patients on beta blockers were genotyped for CYP2D6, CYP2C19, CYP2C9, CYP3A4, and CYP1A2 SNPs using qPCR with TaqMan probes. Statistical analyses included Welch's t-test, Mann–Whitney U test, one-proportion Z-test, Fisher's exact test, and Hardy–Weinberg equilibrium.
Results: Generally, the most dispensed beta blockers were bisoprolol, metoprolol, nebivolol between 4173—8778 DDD/1000 inhabitants/year. In our group of 74 patients, the median number of drugs used was 9. In 93% of them we observed at least one polymorphism, which makes them different from normal metabolizers. Genetic variants of CYP450 enzymes had no direct effect on the difference in blood pressure. However, intermediate or poor metabolizer of CYP2D6 were treated with lower dose of antihypertensive combination in comparison to normal metabolizers (4.0 vs. 5.8 DDDs, respectively; $p = 0.0497$), although without significant difference of beta blocker dosages (0.46 vs 0.47 DDDs, respectively; $p = 0.69$).
Conclusion: Beta blocker are frequently used medication in treatment of CHF. Pharmacogenetic testing revealed that high number of patients have altered drug metabolism, which may have an effect on the efficacy and safety of the treatment. An important finding is that the patient's genotype should be evaluated in the context of the intensity of pharmacotherapy in a combination of drugs, rather than only explicitly for an individual drug. We can observe this phenomenon in the adjustment of combination therapy in the maintenance of blood pressure.

OC2.7

FRAMEWORK FOR PHARMACIST-LED PHARMACOGENETICS-GUIDED PROTON PUMP INHIBITOR THERAPY

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Background: CYP2C19 is the principal enzyme involved in the metabolism of proton pump inhibitors (PPIs). CYP2C19 genetic polymorphisms impact response to PPIs, resulting in increased risk of therapy failure or tolerability issues. Implementation of pharmacogenetics (PGx)-guided PPI therapy is still in its infancy.[1]
Aim: The aim was to propose a framework for implementation of pharmacist-led PGx-guided PPI therapy in clinical practice.
Method: Following literature review, a framework for implementation of pharmacist-led PGx-guided PPI therapy was developed. An algorithm proposed in a previous study[2] was used as a basis for the framework. One-to-one interviews were conducted with 3 gastroenterologists, a specialist in internal medicine, a paediatrician specialised in gastroenterology, a general practitioner, 2 hospital pharmacists and 2 community pharmacists, to validate the framework for content usefulness, comprehensiveness, content relevance and

practicality, on a Likert scale of 1 to 5 (5 highest). Mean rating scores out of 5 were calculated for each validation criterion.
Results: The framework directs user to assess for occurrence of 'red flag' symptoms of upper gastrointestinal (GI) disease. Pre-emptive CYP2C19 PGx-testing is recommended in newly diagnosed patients falling within priority groups identified from the literature review: *H.pylori* infection, paediatrics, oesophagitis, GI bleeding/peptic ulcers, GORD. Reactive PGx-testing is recommended in patients previously exposed to PPIs in a priority group, experiencing side-effects or demonstrating inadequate response. Genotype-guided therapy is based on the Clinical Pharmacogenetics Implementation Consortium recommendations.[1] Mean years of practice of the health care professionals (HCPs) interviewed was 19 (range 6–35) years, and all were familiar with PGx. The framework was highly rated by the HCPs: Content usefulness (4.1), comprehensiveness (4.1), content relevance (4.4), practicality (3.7). Key recommendations for updating the framework included focusing on inadequate response and side-effects as priority groups and including time points for physician referral.
Conclusion: This research proposes a framework for implementation of pharmacist-led PGx-guided PPI therapy, which was highly rated by the HCPs interviewed. A recommendation is for the framework to be piloted in real practice in a collaborative care context. A study limitation is potential interview bias.

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OC2.8

PHARMACIST INTERVENTIONS AND PATIENT SAFETY: ANALYZING MEDICATION ERRORS IN A HEALTHCARE SETTING—A RETROSPECTIVE STUDY

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Background: Voluntary reporting in healthcare, particularly medication errors, aids in pinpointing system weaknesses and driving quality enhancements, crucial for patient safety. While prevalent in U.S. hospitals, it's underutilized un other latitudes. Encouraging its adoption globally can effectively curb errors, enhancing patient safety.
Aim: The study scrutinizes three years of medication error reports from a 94-bed private hospital's voluntary program. Its goal is to detail commonly associated errors and medications, their severity, and underscore pharmacists' crucial role in enhancing patient safety.
Method: This study was conducted at a private hospital in Costa Rica, serving 34,000 monthly patients across inpatient, emergency, outpatient, and ancillary services. From January 1, 2020, to December 31, 2022, medication orders and error reports submitted by pharmacists and pharmacy interns were evaluated. Data collected included error specifics, healthcare professional identifiers, setting, process step, drug details, and severity (NCC MERP A-I). Percentages were calculated for categorical variables. Error reports were reviewed in quality committee meetings, leading to policy updates, guideline revisions, and training enhancements.
Results: Among 402,100 medication orders, 1,010 errors were reported (0.25% error rate). Errors arose during prescribing (n = 253, 25.0% Inpatient setting). The most common errors were incorrect prescriptions and dosages. An analysis of the top categories involved in errors represented 83% of all reports, revealed the top five drugs were commonly used analgesics. Harm associated with errors, assessed via NCC MERP criteria, resulted in temporary or permanent harm in 1.5% of inpatient errors and temporary harm in 0.1% of outpatient errors. A significant portion of errors (69.9% in inpatient and 81% in outpatient settings) were intercepted before reaching the patient. The hospital conducts monthly reviews of medication error reports to uphold continual improvement and patient safety. Pharmacists are integral to this process. Following evaluation, clinical alerts may be issued, deliberated in quality committee meetings. Relevant departments determine required modifications. Nineteen alerts instigated the formulation of an action plan, resulting in internal procedural, training, and policy amendments aimed at mitigating future errors.
Conclusion: This study demonstrates the critical role of proactive initiatives in fostering a culture of patient safety in hospitals. The implementation of a voluntary medication error reporting system has provided valuable insights into medication safety vulnerabilities. These efforts highlight the importance of addressing underreporting and utilizing error data to enhance understanding and prevention of medication errors, ultimately improving patient outcomes by creating new safety policies.

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OC3.2

PATIENTS' PERSPECTIVES ON TELE-PHARMACEUTICAL APPROACHES TO MEDICATION HISTORY TAKING: SURVEY RESULTS.

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Background: Medication history taking at hospital admission is essential to ensure safe, uninterrupted drug therapy for patients. However, recording an accurate medication history can be time-consuming on the day of admission. Tele-pharmacy could be an alternative for patients with planned admissions, however, patients' views should be considered for its implementation.
Aim: In a survey conducted as part of a prospective interventional study on medication history taking, we aimed to investigate the views

of patients with planned hospital admissions on telephone-based medication history taking and other tele-pharmaceutical approaches.
Method: From October 2023 to February 2024, patients planned to be admitted to a gastroenterology ward at a university hospital were assigned to medication history taking by phone on the working day before admission (intervention) or to personal history taking on admission (control). After the medication history had been taken by phone, intervention patients were asked about their perception of this procedure, while control patients were interviewed on site on admission. The questionnaires recorded the (potential) satisfaction with the telephone approach in terms of time, location, and communication, and views on alternatives (video calls, digital platforms).
Results: A total of 144 patients took part in the survey (69 intervention, 75 control). The majority of intervention patients (74%) favoured taking a medication history before admission over taking it on admission. About 41% found it easier to provide information about their medication at home than in hospital, 51% felt there was no difference. Of all patients, 93% were comfortable discussing their medication over the phone and 82% felt that taking a medication history prior to admission would be helpful for staff. Only 42% of patients were open to having their medication history taken by video call, although 81% owned a suitable device. Conversely, 74% of patients would be willing to provide information about their medication on a hospital online platform. There was a non-significant trend of patients who had experienced the telephone approach (intervention) toward being more open to both video calls (51% vs. 35%; $\chi^2(1) = 3.795$, $p = 0.051$) and digital platforms than control patients and (80% vs. 68%; $\chi^2(1) = 2.537$, $p = 0.111$).
Conclusion: Patients generally rated medication history taking by telephone neutral to positive, especially in the intervention group. Most patients would consider using an online hospital platform to take their medication history. Therefore, approaches involving patients and use technology appear to be a promising option for patients with planned admissions and should be explored in studies as possible alternatives to on-site medication history taking.

OC3.3

KEY PERFORMANCE INDICATORS TO SUPPORT IMPLEMENTING AND SCALING CLINICAL PHARMACY PRACTICE: ANNUAL REPORT AT A TEACHING HOSPITAL.

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Background: Defining and measuring key performance indicators (KPIs) is essential for implementing, evaluating and scaling clinical pharmacy (CP) practice. CHU UCL Namur Godinne is a 450-bed teaching hospital in Belgium, where CP practice started in 2007 and has developed since then.
Aim: To describe the use of CP KPIs at our hospital, report data for 2023 and identify perspectives.
Method: We use 4 sets of structure and process KPIs relative to (a) staff capacity; (b) patient-centred ward activities; (c) transversal activities to train and support healthcare professionals in medication use; (d) research activities. Ward KPIs were automatically derived from the CP file embedded in the Electronic Health Record.
Results: (a) In 2023 there were 5.2 full-time equivalents (FTE) dedicated to CP; 2.3 FTE were dedicated to activities in 3 wards (geriatry, pneumology, and intensive care) and the rest to transversal and research activities.
(b) A CP file was created for 1500 patient contacts; 6398 interventions were documented. Results of the priority activity defined for each ward were as follows: medication reconciliation occurred at discharge for 80% of geriatric patients; medication reconciliation occurred on admission for 74% of patients followed in pneumology; and there was a median of 7 interventions per patient in intensive care. Comparison to 2022 data shows progression on most indicators.
(c) We conducted 60 h of teaching and provided resources on appropriate medication use to physicians and nurses through 268 procedures embedded in the Electronic Health Record. Some of these procedures generated direct savings or helped address drug shortages while optimising quality of care.
(d) 13 articles were published in peer-reviewed journals.
Conclusion: Monitoring KPIs annually has been highly valuable in optimizing, disseminating, and scaling CP activities. In 2024 we will develop new activities in infectiology and prepare a strategic plan for further developments over the next 5 years.
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OC3.4

ASSOCIATION BETWEEN THE LONG-TERM USE OF HIGH ANTICHOLINERGIC DRUGS AND ITS BURDEN AND THE INCIDENCE OF DEMENTIA IN STROKE.

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Background: The effects of anticholinergic drugs on cognitive dysfunction in middle-aged and older adults have been widely studied. However, inconsistent results have been obtained due to heterogeneity in the studies' designs and in the inconsistency of the anticholinergic burden (ACB) scales used.
Aim: The aim was to assess the association between ACB and the incidence of dementia in older adults with and without cognitive impairment.
Method: The data was obtained from the APPLE (Assessing Post-Stroke Psychology Longitudinal Evaluation) cohort study with inception at time of acute stroke. A multiple regression statistical test using R was performed to measure the relationship between ACB and the incidence of dementia, adjusted for age, gender, comorbidities and smoking status. Four different anticholinergic scoring, the Anticholinergic Risk Scale (ARS), Anticholinergic Cognitive Burden Scoring of drugs (ACB), Clinician- rated Anticholinergic Score (CrAS) and the Anticholinergic Drug Scale (ADS) were implemented.
Results: 353 patients were included and their ACB was assessed. The participants had a median age of 71 years and around 27% were over 80 years. Most participants were male (55.8%) and categorized without pre-existing dementia (76.5%). Out of the 353 participants included, 120 (34%) were not taking any anticholinergic medication at baseline (scored = 0 in all four anticholinergic burden scales). 233 participants (66%) were taking anticholinergic medications (scored ≥ 1 for any of the scales). In adjusted multiple regression analyses, high anticholinergic burden, measured by all four anticholinergic scores, did not have a statistically significant effect on the incidence of dementia (ARS [OR] 0.98 [95% CI] 0.87–1.09, p 0,728; ACB [OR] 0.99 [95% CI] 0.92–1.06 p 0.751; CrAS [OR] 0.98 [95% CI] 0.90–1.07 p 0.691; ADS [OR] 0.99 [95% CI] 0.91–1.07 p 0.820).

Conclusion: Among an adult stroke population with and without cognitive impairment, the use of anticholinergic drugs was not associated with a greater incidence of dementia.

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OC3.5

PHARMACISTS AND PHYSICIANS TOGETHER IMPROVING PATIENTS' MEDICATION SAFETY: A PILOT STUDY

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Background: Medication review is known to reduce drug-related problems (DRPs) and thus augment medication safety. Community pharmacists are intensively trained to deliver medication reviews, but several studies have been showing little to no effect. Important barriers were implementation into routine practice and lacking interprofessional collaboration.
Aim: This pilot study aimed at showing the feasibility and acceptability of an interprofessional service for primary care patients including a screening for risk for DRPs, medication review and shared decision making to improve the medication safety, informing implementation strategies for the broad dissemination of this service in Switzerland.
Method: A convenience sample of general physician (GP) practices and co-working community pharmacists were recruited and instructed in interprofessional workshops. The service consisted of three steps: 1) screening and referral of patients with increased risk for DRPs to the community pharmacy in the GP practices; 2) a Type 3 medication review by the community pharmacist; 3) joint decision of GP and patient on therapy changes. Screening questionnaires and process indicators were analysed descriptively. Semi-structured interviews were performed with GPs, GP staff, community pharmacists and patients, and analysed for feasibility and acceptability of the service.
Results: Four gp practices and co-working community pharmacists were recruited and instructed. 172 patients completed the screening for increased risk of DRPs and 23 were referred to the community pharmacy. For all referred patients a medication review could be performed within a suitable time frame. Medication reviews took 94 ± 61 min and led to 2.95 ± 1.54 suggestions to optimise medication therapy. Of the participating healthcare professionals, 5 gps, 1 apn, 6 mpas and 7 community pharmacists were interviewed. They were satisfied about the instruction workshop. Everybody valued the idea of the service, however, the process was critcsised for several reasons: lack of time, more work in the primary health care, difficulties to involve the whole team. Out of 14 patients being interviewed, 7 would recommend the service to a friend or family member and 5 would participate again with a net promoter score of 28.57 resp. 7.14. Fifty percent of the interviewed patients would pay for the service.
Conclusion: This pilot study of an interprofessional service to improve patients' medication safety was highly accepted by healthcare professionals and patients. The interviews showed that processes and integration into daily routine should be improved to increase feasability. These results and a context analysis will inform the development of implementation strategies to broadly and sustainably implement this service in Swiss primary care.

OC3.6

CLINICAL OUTCOMES IN PATIENTS RECEIVING MEDICATION MANAGEMENT SERVICES: A PRE AND POST INTERVENTION STUDY

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Background: Although fairly novel and insufficiently incorporated in healthcare systems across Europe, Comprehensive Medication Management (CMM) services provided by trained pharmacists can address the problem of medication mismanagement, stemming from polypharmacy and inappropriate drug use.
Aim: The objective of this study was to evaluate the clinical outcomes in patients with hypertension, dyslipidaemia and type 2 diabetes following CMM intervention in the ambulatory care clinic during a 6-year period.
Method: This prospective, pre- and post-intervention study with a six-year follow-up was conducted between January 2018 and April 2024 at the Health Centre Zagreb—Centar (HCZC). Patients referred to HCZC's CMM services with at least one regular prescription medication and 18 years or older were eligible for inclusion. Sociodemographic, anthropometric data and clinical data were collected for each patient by pharmacists providing the service. The assessment of the clinical status was obtained by comparing the clinical outcomes (blood pressure, HbA1c, LDL, TC) between the first and the most recent consultations.
Results: The study included 909 patients with a median age of 73 (19—100) years, who used an average of 9 (0—25) medications and had 8 (1—24) comorbidities. In a total of 2457 consultations (2.7 ± 2.4 per patient), 3692 drug-therapy problems (DTPs).
(4.2 ± 2.9 per patient) were identified. The most common DTPs were "Need for additional therapy" (35.4%) and "Dose too low" (18.3%). By assessing the clinical status of hypertension, dyslipidaemia and type 2 diabetes in 433 patients with unmet treatment outcomes at the first visit, in 117 (21.0%) cases health status improved, while in 44.4% it remained unchanged ($p < 0.001$). Of the 1157 interventions proposed to the primary care physician (PCP) and for which the feedback was received, 1005 (86.9%) were accepted by the PCP. The most frequently implemented interventions included the initiation of a new therapy (19.6%), the introduction of a dietary supplement, herbal medicine, or dermocosmetics (11.1%), and discontinuation of therapy (11.2%).

Conclusion: The research results demonstrated that this model of care can significantly contribute to better clinical outcomes, highlighting the need for wider implementation of CMM services.
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OC3.7

MEDICATION PATTERNS AND POTENTIALLY INAPPROPRIATE MEDICATION IN GERMAN METASTATIC BREAST CANCER PATIENTS

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Background: Treatment of metastatic breast cancer (mBC) includes supportive care to reduce side effects. In addition, mBC patients are often treated for comorbidities. This combination increases the risk of polypharmacy, potential drug-drug interactions (DDI), potentially inappropriate medication (PIM), and potentially missing drugs.
Aim: Therefore, the aim of this study was to assess medication patterns in a cross-sectional study of German mBC patients using data from routine medical records.
Method: Data were derived from mBC patients, aged $\geq$ 18 years, living in Bavaria, and gave written informed consent to participate in the BRE-BY-MED study "Breast Cancer Care in Bavaria for Patients with Metastatic Disease" (DRKS00026601). At study inclusion, the treating physicians documented information on mBC therapy. Additional medication was extracted from routine medical records. PIM, potential DDI and potentially missing drugs were assessed using established criteria (PRISCUS list, STOPP/START Criteria, German S3 Guideline for Diagnostic, Treatment and Follow-up Care of Breast Cancer, German S3 Guideline for Supportive Therapy for Oncological Patients).
Results: 93 patients were consecutively enrolled in the BRE-BY-MED study with a median age of 60 years (IQR = 49–65 years). One patient was male. A total of 668 drugs were documented for all patients, including 131 unique substances. Proportionate to the total number of drugs, most were part of the BC therapy (44.0%), followed by supportive therapy (18.0%), vitamins/minerals/nutritional supplements (12.1%), drugs for the cardiovascular system (11.4%), drugs for the gastro-intestinal system (4.2%), drugs for the endocrine system (4.0%), psychiatric medicine (3.1%), drugs for the respiratory system (1.6%), drugs for the neuronal system (0.4%), and other drugs (1.2%). Patients took a median of 6 (IQR = 5–9) concomitant drugs. Polypharmacy was observed in 80.6% (n = 75) of the patients. PIM were documented in 9.7% (n = 9) of the patients, potential DDI in 12.9% (n = 12) of the patients, and potentially missing drugs in 52.7% (n = 49) of the patients.
Conclusion: The high drug burden observed might be problematic as more than a quarter of the documented drugs were comorbidity medication. These might not only be associated with additional risk of side effects, DDI, and PIM, yet might also contribute to low medication adherence, higher medication costs and impaired quality of life. Given the predicted life expectancy of mBC patients of 2 to 4 years, the question might be raised whether comorbidity medications should be deprescribed. Eventually, mBC patients might benefit from closer monitoring of their medication.

OC3.8

EVALUATION AND OPTIMISATION OF ANTIBIOTIC USE AND CONSUMPTION IN AZ ALMA, BELGIUM, WITH FOCUS ON RESTRICTED ANTIBIOTICS

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Background: Although antibiotics are very effective agents, overuse and misuse can cause drug-resistant bacteria. Antimicrobial resistance is one of the top global public health and development threats. Concomitant with this is the increase in hospital costs. To limit this, every healthcare institution should implement a well-developed antimicrobial stewardship policy.
Aim: The aim was to check the appropriateness of a current meropenem and vancomycin treatment and to compare antibiotic consumption before and after intervention. In addition, during post-intervention, the potential clinical, economic and organisational impact and acceptance rate of recommendations given through a post-prescription review (PPR) was analysed.
Method: A prospective cohort study was carried out for 11 months consisting of 3 phases. Observational phase was performed to obtain a baseline of the appropriateness of meropenem and vancomycin prescriptions using a Gyssens et al.'s algorithm[1]. Educational, restrictive and structural interventions were implemented in phase 2. During the post-intervention phase, antibiotic usage was again evaluated prospectively during 3 months. During a PPR, the potential clinical, economic and organisational impact of recommendations was evaluated using the CLEO tool[2]. Antibiotic consumption was expressed as DDD/100 admissions and data analysis was performed using SPSS and Stata.
Results: Overall, 46 meropenem and 49 vancomycin prescriptions at baseline and 33 and 40 during post-intervention were reviewed respectively. Interventions improved appropriateness of meropenem and vancomycin from 47.8% to 66.7% ($p = 0.096$) and from 14.3% to 57.5% ($p < 0.001$) respectively. Overall appropriate antimicrobial therapy represented a 31.11% improvement ($p < 0.001$). Furthermore, a statistically significant difference in days of therapy (DOT) for meropenem (7.8 ± 3.1vs4.6 ± 1.2,$p < 0.001$) and vancomycin (8 ± 2.8vs6 ± 3.3,$p = 0.0037$) existed after intervention. During PPR, recommendations were accepted in 62.5% and 74.3% of the cases respectively. Total acceptance rate was 69.5%. Pharmaceutical interventions (PIs) related to vancomycin therapy had potentially the most favourable clinical and economic impact. Potential organisational impact of PIs was notably higher in the case of meropenem. Antibiotic consumption of meropenem as well as vancomycin decreased from 9.1 DDD/100 admissions to 6.4 and from 9.8 DDD/100 admissions to 7 respectively. This is almost a 30% decrease ($p = 0.045$) after the intervention.
Conclusion: Despite its limitations and the lack of an infectious disease specialist, the implemented antimicrobial stewardship interventions were successful to obtain more appropriate meropenem and vancomycin treatments. PIs provided through a PPR had a positive clinical, economic and organisational impact, showing the added value of a clinical pharmacist. Further, the study showed a significant decrease in DOT as well as in antibiotic consumption. Further research is needed to evaluate the long-term sustainability of the educational, restrictive and structural interventions.

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OC4.1

OPTIMIZING MEDICATION RECONCILIATION: THE PHARMACIST'S ROLE IN SECURING THE BEST POSSIBLE MEDICATION HISTORY

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Background: Obtaining the Best Possible Medication History (BPMH) using at least two sources of information of the patient's chronic medications is crucial for optimal medication reconciliation, in terms of patient safety. The pharmacist is the most suitable professional to obtain the BPMH.
Aim: To quantify inconsistencies between each patient's clinical record and the pharmacist-obtained BPMH and to compare the intentional discrepancies (IDs) and unintentional discrepancies (UDs) found in the medication reconciliation taking into consideration either the clinical record or the BPMH.
Method: Prospective study (Oct 2023—Mar 2024) conducted in a general hospital in Portugal, approved by its Ethics Committee. Adult patients undergoing *major* orthopedic surgery and taking at least one chronic medication were included. At admission, the pharmacist obtained the BPMH from clinical records, patient interviews, and physical medication confirmation. Drug-information inconsistencies between the clinical record and the BPMH were quantified. Medication reconciliation IDs and UDs were compared. Data analysis used descriptive quantitative methods (M. Excel) and the Mann–Whitney U test ($p \leq 0.05$).
Results: Of the 122 patients included in the study, 96 (79%) had at least one inconsistency between clinical records and the pharmacist-obtained BPMH. The total amount of inconsistencies was 358, averaging 2.93 (± 3.29) per patient. The most common type of inconsistency was Medication Omission (124; 35%), followed by Dose Omission (92; 26%), Frequency Omission (75; 21%), Divergent Dose (30; 8%), Divergent Frequency (25; 7%), Medication Inclusion (10; 3%), and Allergies (2; 1%). During the medication reconciliation process by using only the clinical record, 266 discrepancies were identified (150 IDs, 116 UDs); using BPMH, 377 discrepancies were found (208 IDs, 169 UDs). Statistically significant differences were observed in both IDs ($p = 0.008$) and UDs ($p = 0.006$) between the two processes, suggesting higher patient risk when using only the patient's clinical record.
Conclusion: The study underscores the importance of pharmacist-obtained BPMH as the best strategy for accurate medication reconciliation tailored to patient realities. Insufficient or misleading information in clinical records may lead to missed discrepancies, which can compromise patient safety. We conclude that more active pharmacist involvement is essential to gather BPMH, thereby identifying discrepancies and raising team awareness of the associated risks.

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OC4.2

PREVENTION OF ACUTE KIDNEY INJURY: IMPLEMENTATION OF SICK DAY GUIDANCE IN PRIMARY CARE

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Background: During periods with risk of dehydration such as diarrhoea, fever, vomiting (so-called 'sick days') or heatwaves, guidelines advise temporarily discontinuing high-risk drugs in patients with pre-existing impaired renal function to prevent acute kidney injury. To date, healthcare professionals struggle with implementing sick day guidance in daily practice.
Aim: To implement and evaluate sick day guidance for patients with pre-existing impaired renal function and use of high-risk medication in community pharmacies.
Method: For a study period of 1 year, a community pharmacy and at least one affiliated general practitioner (GP) collaborated in implementing sick day guidance. A kick-off meeting was organised to make agreements about handling and monitoring sick days. Training materials for healthcare professionals and information materials for patients were available. Through a consultation, patients were instructed to report a sick day to the pharmacist or GP. Data was collected on the number of sick day reports, and the patients' knowledge about sick day guidance. The implementation was evaluated through telephone evaluations with patients and interviews with pharmacists and GPs.
Results: In total, 21 community pharmacies participated in which 325 patient consultations regarding sick day guidance were held. The median age of patients was 78 (IQR: 73–84), 49% were female, 86% used more than one high-risk drug and 27% had an individualised drug-dispensing system. Eight sick day notifications were registered during follow-up. In these cases, high-risk medication was successfully temporarily discontinued or adjusted and restarted. A total of 176 telephone evaluations with patients were performed. Around 49% of the patients did not remember the consultation or could not reproduce the information provided during the consultation. In addition, during the telephone evaluations with patients, 10 sick days were not registered because, among other reasons, patients forgot to notify a healthcare professional or thought their complaints were not severe enough.

Conclusion: The knowledge retention of high-risk patients after a one-time provision of information about sick day guidance is limited and results in a limited number of sick day notifications. Repeated information provision, preferably in person at the pharmacy or GP practice may potentially increase the number of sick day notifications. Further research should aim to identify barriers for patients in reporting sick days and look into involving the network around the patient i.e. homecare nurses or informal caregivers to support the patient during sick days.

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OC4.3

ASSESSMENT OF THE CLINICAL PHARMACIST-LED MEDICATION RECONCILIATION IN SURGICAL WARDS

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Background: The medical management of surgical patients involves significant postoperative monitoring. However, the lack of prescribers results in a suboptimal medical care, mainly for the chronic treatment prescriptions. Since May 2023, a clinical pharmacist was implemented and conducted complete medication reviews and medical reconciliations for all surgical patients.

Aim: The aim of our study was to assess the clinical pharmacist proactive and retroactive medication reconciliations (MR) in the surgery wards.

Method: It was a monocentric retrospective study conducted within the urological, visceral, orthopedic and otorhinolaryngological surgery wards from June to September 2023. Patients who required an emergency surgery benefited from a retroactive MR whereas scheduled patients benefited from a proactive MR. Surgeons could use the proactive MR information collected by the clinical pharmacist as a prescription basis. We extracted through the electronic prescribing system (Pharma®) the demographic, pharmaceutical analysis and MR data (number and sources of MR, scoring of the discrepancies, number of pharmaceutical interventions, number of corrected discrepancies).

Results: During the study period, 316 patients were admitted to the different wards and 301 (92%) benefited from a MR (M/F ratio: 1.4, median age = 66 years old). Among the 120 (40%) proactive MR, 13 (11%) were used as the basis for prescription by prescribers. Of the 181 (60%) retrospective MR, only 10% of initial prescriptions included chronic treatments. Sources used included preoperative anesthesia consultations (54%), medical records (27%), and patient prescriptions (20%). In total, 279 unintentional discrepancies were identified: 38 (12%) were major discrepancies with a vital risk for the patient (antibiotics, antiepileptics, antiarrhythmics), 65 (20%) were significant discrepancies (hypolipidemics, hormone replacement therapies), 44 (14%) were minor discrepancies (PPIs, supplements) and 132 (47%) involved other medication-related issues. Among the 281 pharmaceutical interventions, 107 (38%) were then corrected by prescribers. It included treatment omissions, prescription or dosage adjustments, medication substitution errors.

Conclusion: Having a surgery clinical pharmacist appears to be crucial to monitor chronic treatment alongside with the surgeons and the nurses. Indeed, 300 (92%) medication reviews were conducted in 4 months and 38% of the pharmaceutical interventions were corrected. Subsequently, the surgery clinical pharmacist will be able to directly adjust the chronic treatment prescriptions and also improve the antibiotic stewardship of the patients with osteoarticular infections.

OC4.4

PHARMACOGENOMICS AND PRESCRIBING RATES IN NORTHERN IRELAND

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Background: Pharmacogenomic-considerate practice represents the next phase of quality healthcare provision. However, identification of drug-gene interactions that exist among currently prescribed medicines is the first critical step towards fully understanding prescribing behaviour and ultimate integration of pharmacogenomic-considerate practice into Northern Ireland.

Aim: The aim of this research is to identify the most commonly prescribed medicines that are deemed to be pharmacogenomically relevant with actionable drug-gene interactions, and to determine the prescribing rates of these medicines in Northern Ireland across a 24 month period between January 2021 to December 2022.

Method: Medicines with actionable drug-gene interactions were identified by interrogation of pharmacogenomic databases including Pharmacogenomics Knowledge Base and the Clinical Pharmacogenetics Implementation Consortium. Following compilation of the actionable medicines list, quantitative retrospective analysis of Northern Ireland prescribing data from January 2021 to December 2022 was undertaken. This enabled prescribing rates of medicines in Northern Ireland with actionable drug-gene interactions to be determined. This data was analysed using Microsoft® Excel® (Version 2309) and statistical analysis conducted using IBM SPSS® Statistics (Version 29.0.1.0).

Results: Of the 38,847,653 medicinal items prescribed in Northern Ireland from January 2021 to December 2021, 20.71% (n = 8,046,666) were medicines that are known to have actionable drug-gene interactions, with 1,170 different medicines prescribed in Northern Ireland during this period. Interrogation of pharmacogenomic databases identified 108 medicines classified as having actionable drug-gene interactions. An average of 75.46% (n = 82) were medicines prescribed in Northern Ireland from January 2021 to December 2022. Of all medicinal items prescribed in Northern Ireland during this two-year period, 20.53% (n = 8,096,189) were medicines with actionable pharmacogenomic status. Analysis showed that the largest category of medicines included Central Nervous System medicine (43.21%; n = 35). The remaining 56.79% of actionable pharmacogenomic medicines prescribed in this period are distributed among 11 other therapeutic areas including Obstetrics & Gynaecology, Cardiovascular disease and immunosuppression, and Musculoskeletal disorders and joint disease.

Conclusion: This study highlights that medicines with actionable drug-gene interactions are being prescribed in Northern Ireland without consideration of interpatient genetic variation. One-fifth of all medicinal items prescribed in Northern Ireland had actionable drug-gene interactions, validating the necessity for pharmacogenomic services in Northern Ireland. This work supports the need for widespread pharmacogenomic analysis to become a staple of prescribing considerations, given such vast prescribing practice is already in place.

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OC4.5

EFFECTIVENESS OF MEDICATION THERAPY MANAGEMENT PROGRAM IN DIABETIC PATIENTS: A RANDOMIZED CONTROLLED TRIAL

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Background: The community pharmacy (CP) practice in Kingdom of Saudi Arabia is still in its early stages and requires significant improvement. Under Vision 2030, Saudi healthcare is transforming significantly. This study is part of a larger project to develop a medication therapy management service.
Aim: To assess the impact of the CP-based medication therapy management (MTM) program on clinical and humanistic outcomes.
Method: Design Randomized controlled trial. **Subjects** Patients diagnosed with uncontrolled diabetes. **Intervention:** MTM program provided by pharmacists. **Control** Standard care. **Setting** Community Pharmacy in Riyadh, Kingdom of Saudi Arabia. **Primary outcome** Change in HbA1c over 6 months. Secondary outcomes Change in clinical parameters [blood pressure (BP), lipid profile, Serum creatinine (Srcr) and Albumin-to- creatinine ratio (ACR)], drug-related problems (DRPs), health service utilization (HSU), adherence, diabetes distress and overall patient satisfaction with the service at 6-month.
Results: A well-powered sample of 160 diabetic participants with a mean age of 50 years was recruited. After adjusting for baseline HbA1c, the mean HbA1c level was 0.02% lower at 3-months and 0.2% lower at 6-months in the intervention arm compared to usual care, though this difference was not statistically significant. Nonetheless, both groups showed an improvement in HbA1c from baseline. Additionally, the intervention arm exhibited significantly better blood pressure control compared to the control group, with SBP reduced by 3.2 mmHg and DBP reduced by 3.8 mmHg. During the study period, none of the participants in the intervention group reported hospitalization or ER visits, compared to 14 participants in the control group. Patients in the MTM program were eight times more likely to adhere to their treatment compared to those in the standard care group. The number of DRPs significantly decreased in the intervention arm at both 3 and 6 months.
Conclusion: The CP-based MTM program can improve health outcomes and decrease hospitalizations for patients with diabetes. These findings support the adoption of CP-based MTM services for diabetic patients in Kingdom of Saudi Arabia and globally.

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OC4.6

APPROPRIATENESS OF THE USE OF STATINS IN OLDER PATIENTS IN LONG-TERM CARE FACILITES IN FOUR CENTRAL AND EASTERN EUROPEAN COUNTRIES

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Background: Cardiovascular diseases are the most common cause of morbidity and mortality worldwide. Statins confirmed significant cost-effectiveness in older age, both in secondary and tertiary prevention of atherosclerotic diseases, as well as in primary prevention in high-risk patients. However, statins are often underutilized, particularly in frail older adults.
Aim: The aim of this study was to determine the prevalence of use of statins in seniors in long-term care in 4 EU countries and to describe the basic aspects of appropriateness of the use of statins (selection, dosing, timing and drug-drug interactions), as well as their prescription in patients at various stages of CVS risk and CVS prevention.
Method: Data were obtained from the European project START/MED/093 (2021–2024, 4 participating EU countries: Czech Republic, Croatia, Slovakia and Bulgaria). Data collection was organized in each country in 3 regionally distinct long-term care facilities (LTCF). The study was approved by the Ethical Committee of the Faculty of Pharmacy, Charles University, Czech Republic, assessment included all patients 65 + . Excluded were patients with severe dementia, unable to communicate and receiving palliative care. Patients were assessed using the comprehensive geriatric assessment tool interRAI-LTCF, which performs a standardized comprehensive geriatric assessment.
Results: A total of 876 seniors aged 65 and older were assessed in the Czech Republic (N = 225), Croatia (N = 226), Slovakia (N = 225) and Bulgaria (N = 200). 71.4% of them were women, with a predominance of patients in the age group of 75–84 years (43.4%). The most common cardiovascular diseases were: arterial hypertension

(77.5%), ischemic heart disease (27.4%) and dyslipidemia (26.7%). 43.3% of patients used 5–9 medications and 29.9% 10 and more medications. 23.2% of patients were prescribed monocomponent statin and a fixed combination of a statin was found in only 1.4% of patients. The most commonly prescribed were atorvastatin (13.8%), rosuvastatin (6.1%) and simvastatin (1.8%) (usually in a daily dose of 20 mg), and fluvastatin (only in 1 patient in a daily dose of 80 mg). Drug interactions occurred in 12.6% of seniors but were not contraindicated. 5.1% of the patients had a very high risk of CVS events and only 25% of them were treated with statins. Most of the assessed older adults (50.5%) fell into the category of tertiary prevention, but only 15.2% of them were treated with statins.

Conclusion: The majority of seniors in LTCFs in CEE were prescribed appropriately atorvastatin and rosuvastatin recommended in the older age. The occurrence of drug interactions was rare, however, a large proportion of older patients in secondary and tertiary prevention were not treated even with low doses of a statin. It is important to pay attention to cardiovascular prevention and more carefully to check the indication of statins, frequently omitted in combined drug regimens, particularly in frail older patients.

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OC4.8

RECENT PATTERNS OF PSYCHOTROPIC MEDICATION USE BY AGE, GENDER AND DRUG TYPE IN CHILDREN AND ADOLESCENTS IN IRELAND

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Background: The prevalence of neuropsychiatric disorders in children/adolescents is increasing and has been paralleled by a global rise in prescribing of most classes of psychotropic medications.(1) Along with increased prescribing rates, variations in patterns of psychotropic medication use, according to age group, gender and drug type, have been reported.

Aim: This study aims to analyse patterns of psychotropic medication use in Ireland according to age, gender and drug type to determine if variations exist, and identify if there are specific nuances and questions to be addressed in future research.

Method: A retrospective, repeated, cross-sectional study of the Irish pharmacy claims database was conducted. Yearly prevalence of children/adolescents receiving dispensed psychotropic medications was analysed from January 2017 to December 2021, across years, age groups (overall 5–15, 5–11, 12–15 years), gender and by drug class type. Population data (most recent) for the entire 5–15, 5–11 and 12–15 years population were obtained from the Central Statistics Office, Census 2016. A negative binomial regression model was used to determine trends over time in prevalence. Prevalence was compared across years, age groups, gender and drug type.

Results: This study found significant variations in usage depending on drug type, age and gender. Prevalence for all selected psychotropic medications was higher in the older age category, with larger increases in prevalence from 2017 to 2021 also observed. Of note, for the 5–11 years group, while there was an overall increase in prevalence from 2017 to 2021, a slight decrease was observed from 2020 to 2021 for males (1.4%) and females (2.4%). Prevalence for all selected psychotropic medications in 2021 was almost twice and three times as high (respectively) in males than females. Although rankings of individual medications have remained largely static, sertraline has overtaken fluoxetine as the most commonly dispensed antidepressant, and quetiapine has become the third most commonly dispensed antipsychotic across all age groups in the 5–15 years cohort.

Conclusion: Prevalence of psychotropic medication use is higher in males than females, although use is increasing at a higher rate in females. Less prescribing in females may reflect under or late diagnosis and requires further research. Usage is higher in older children than younger**.** For the younger age group, the year 2021 saw a small decrease in use relative to 2020. Internationally, it has been suggested that the COVID-19 pandemic may have changed access to care or medication usage patterns although further research is needed to determine whether this is true for Ireland.

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OC5.2

DESCRIPTION OF PHARMACISTS' ROLES IN PHOENIX-COMMUNITY PHARMACY PILOT RANDOMISED CONTROLLED TRIAL FOR PEOPLE EXPERIENCING HOMELESSNESS

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Background: People experiencing homelessness (PEH) face inequality in access to care and face social exclusion and marginalisation. They find difficult to navigate appointment-based health services and experience lack of integration in services to address in physical, mental, social and practical care needs. Most PEH die in their early 40 s [1].

Aim: To describe pharmacist's novel and extended roles in the PHOENIx Community Pharmacy randomised controlled trial for people experiencing homelessness.

Method: The PHOENIx Community Pharmacy study is multicentre-parallel-group-pilot RCT that aims to offer integrated pharmacist prescriber and third sector support for PEH. Homeless adults($\geq$ 18 years) were recruited from five community pharmacies in Birmingham and Glasgow, UK and randomised (1:1) to PHOENIx plus Usual Care (UC) or UC. Participants in the intervention group receive weekly visits from the pharmacist and the third sector support worker for 6 months. Pharmacist prescriber kept log of all screening, intervention and referral activities in patient medical notes which are descriptively and qualitatively analysed.

Results: A total of 100 participants (50 intervention and 50 UC) were recruited successfully. For participants in the intervention group,

pharmacists clinically assessed participants for a range of physical, mental health, and addiction; prescribed medications including antidepressants, respiratory medications, blood and nutritional products; made urgent referrals and accompanied them as necessary in clinical appointments such as in the general practice and substance misuse clinics on both encouragement and advocacy roles. Outreach appointments were conducted in community pharmacies, temporary hostels and accommodations, streets, homelessness support hub. Pharmacists also used motivational techniques to improve participant engagement to health services. Alongside the third sector support worker, pharmacist also made provision of food and clothing via support hub, accompanied them in housing, bank and social benefits appointments.

Conclusion: This study shows that pharmacists can effectively engage and offer intensive outreach-based services for PEH recruited through community pharmacy to conduct holistic assessment, treatment and referral for physical, mental health and addiction problems. Working alongside third sector and wider agencies, pharmacists also have the potential to opportunistically intervene on housing, social and practical matters to impact on wider determinants of health.

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OC5.3

PATIENT EXPECTATIONS AND NEEDS DURING CLINICAL PHARMACY ACTIVITIES: SEMI-STRUCTURED INDIVIDUAL INTERVIEWS IN KIDNEY GRAFT PATIENTS

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Background: Compliance among patients treated with immunosuppressants is estimated at 48% one year after renal transplantation. In our center, we wanted to evaluate and improve our clinical pharmacy practices (pharmacist counselling sessions with immediate post-transplant and M3 follow-up, therapeutic education group workshop for recent kidney transplant patients).

Aim: The main objective is to analyze and target kidney transplant patients expectations and needs during clinical pharmacy activities. The secondary objective is to improve the overall management of transplant patients by gathering their comments and suggestions for improving the renal transplant circuit.

Method: This is a monocentric qualitative study with semi-directed interviews conducted from February to March 2024. Patients included are newly kidney transplant patients (under a year) wereas excluded are non-French speakers and minors. A bibliographical search preceded the elaboration of an interview guide, reviewed by pairs, composed by five sections (general information, medication, return to everyday life, healthcare professionals, conclusion). The anonymous recordings were transcribed in verbatim and analyzed using Nvivo14® software. Recruitment was carried out until saturation, reached when patient discourse becomes redundant without new information.

Results: The results are presented in six peer-reviewed categories (feelings, medication, quality of life, information, vaccination, activities), saturation is reached after nine patients. Patients' negative feelings stemmed mainly from the number of drugs, the dispensing of generics instead of originals, and fear of drug interactions. Patients were satisfied with the nurses' attentiveness and support, as well as with their post-transplant progress. They expressed their confidence in the medical team, doctors, nephrologists and pharmacists. A lack of awareness of drug interactions and a relative knowledge of patients' treatments were noted. Almost all patients reported that the transplant had improved their quality of life (especially compared with dialysis). The results report a lack of pre-transplant warnings (tiredness, many medicines), a lack of pre-transplant and immediate post-transplant information (intubation, procedure), as well as poorly explained medical terms. Vaccination information was insufficient (no systematic reminder during consultation). Some patients noted a taboo about resuming sexual activity and the associated problems.

Conclusion: This study highlights prospects for improvement about explanations of common terms (drug interactions) and medical communication in the immediate pre- and post-transplant phase. After identification, taboo subjects might be discussed with the practicioner (for instance during multi-professional group workshops), and consultation report will be drawn up to improve the town-hospital network. Finally, we plan to step up vigilance regarding vaccinations, and to encourage pharmacists to be more proactive in their follow-up pharmaceutical interviews at M3 post-transplant.

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OC5.4

PATIENT PERSPECTIVES ON POTENTIAL PHARMACIST PRESCRIBING IN THE NETHERLANDS: A NATIONWIDE SURVEY STUDY

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Background: Pharmacist prescribing can enhance the quality of and accessibility to healthcare. However, in many countries including the Netherlands, pharmacists lack legal authority to prescribe medications. The perspective of patients, directly affected by pharmacist prescribing, remains largely unknown.
Aim: This study aimed to investigate patient perspectives on potential pharmacist prescribing in primary care in the Netherlands.
Method: An online nationwide survey was developed and emailed to 19,953 members of a patient panel previously recruited via community pharmacies in the Netherlands. The questionnaire included statements with example cases in which a pharmacist would prescribe,—along with required preconditions, benefits and risks of pharmacist prescribing. Agreement with these statements was measured. Data were collected in April and May 2024, and analysed using descriptive statistics.
Results: In total, 3852 participants (mean age 69 years) completed the questionnaire (19% response rate). A majority of the participants agreed with pharmacist prescribing in case of repeat prescriptions (n = 2659, 69.0%), therapeutic substitution due to drug shortages (n = 2625, 68.1%), minor ailments (n = 2402, 62.4%), deprescribing (n = 2206, 57.3%) and changing chronic treatment after consultation with a physician (n = 1998; 51.9%). Less support was expressed for changing chronic disease treatment due to adverse (n = 1417, 36.8%) or lack of effects (n = 849, 22.0%) without explicit physician consultation and for chronic disease diagnosis by a pharmacist (n = 586, 15.2%). The precondition that participants most often indicated as important was presence of clear agreements between physicians and pharmacists about prescribing tasks (n = 3525, 91.5%). The benefit of pharmacist prescribing with the highest agreement was reduced physician workload (n = 3852, 55.8%). The most prevalent perceived risks were related to the physicians losing overview of the patients' treatment (n = 2569, 66.7%) and more distance between patients and physicians (n = 2521, 65.4%).
Conclusion: A majority of patients see opportunities for pharmacist prescribing in primary care in the Netherlands, specifically for repeat prescriptions, drug shortages, minor ailments and deprescribing. There is less support for pharmacist prescribing in more complex cases, especially when done without consultation or collaboration with a physician. These findings may support the introduction of a prescribing role for pharmacists in collaboration with physicians.
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OC5.5

INTRAVENOUS-TO-ORAL SWITCH IN ANTIMICROBIAL THERAPY: A SINGLE-CENTER, OBSERVATIONAL STUDY

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Background: In hospitalized patients, antimicrobial therapies are usually initiated and completed parenterally. Implementing oral treatment in eligible patients is recommended to reduce complications and ensure pharmacoeconomic treatment as an antimicrobial stewardship approach.
Aim: The aim of this study was to evaluate the rate of switching from intravenous route to oral treatment among patients treated with intravenous antimicrobials who were eligible for to oral treatment.
Method: This study was conducted at Hacettepe University Hospitals between September and December 2023. An expert panel was conducted to determine the criteria for switching to oral therapy. During the four-month study period, patients $\geq$ 18-years who received at least 72 h of intravenous antimicrobial therapy were followed up for 30 days without any feedback or intervention. Compliance with the criteria, rate, and time of the switching were recorded. The data analysis was performed using IBM SPSS Statistics version 26.0.
Results: The use of 503 antimicrobial agents was evaluated in 263 patients. 146 (55.5%) patients were female, and the median age (min–max) was 61 (18–94) years. 167 (62.3%) patients were hospitalized in internal medicine wards and 101 (37.7%) in oncology wards. During the use of 455 (90.5%) antimicrobials patients were able to receive oral foods. A total of 41 (8.2%) antimicrobial treatments were switched to oral therapy. In 12/41 (29.3%) switched antimicrobials, the switch was not appropriate according to the criteria. 101 antimicrobials (20.1%) were eligible for switching according to the criteria. 29 (28.7%) antimicrobials were switched on any day that patients met the switching criteria. 227 (45.1%) patients received all antimicrobials intravenously throughout treatment periods, but in 19 (3.8%) patients all drugs were switched to oral treatment. There was no significant difference between switched and non-switched patients in terms of hospital readmission, microbiologic cure, and *Clostrioides difficile* infection at 15 and 30 days ($p > 0.05$).
Conclusion: In this study, less than one-third of patients eligible for oral treatment were switched from intravenous to oral route at any time of the treatment. Switching to oral antimicrobial therapy is an important goal of antimicrobial stewardship programs when patients are eligible for oral treatment. Audit and feedback interventions about switching can increase the rate of oral therapy use in eligible patients.

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OC5.6

THE ROLE OF PHARMACISTS IN DEPRESCRIBING BENZODIAZEPINES: A SCOPING REVIEW.

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Background: Polypharmacy can increase the risk of adverse drug events, hospitalisation, and unnecessary healthcare costs. Evidence indicates that discontinuing certain medications, such as benzodiazepines, can improve health outcomes, by resolving adverse drug effects.
Aim: This scoping review aims to explore the pharmacists' role in deprescribing benzodiazepines.
Method: A scoping review has been conducted to distinguish and map the literature, discover research gaps, and focus on targeted areas for future studies and research. A systematic search strategy was conducted to identify relevant studies from PubMed, Medline, and EMBASE databases. The eligibility criteria involved studies that focused on the role of pharmacists in benzodiazepine deprescribing, quantitative and qualitative studies conducted in humans, and full-text articles published in English.

Results: Twenty studies were identified, revealing three themes: 1) pharmacists' involvement in benzodiazepine deprescribing, 2) the impact of their involvement, and 3) obstacles impeding the process. Pharmacists involved in deprescribing procedures, mainly through completing medication reviews, collaborative work with other healthcare providers, and education. Pharmacists' involvement in benzodiazepine deprescribing intervention led to better health and economic outcomes. Withdrawal symptoms after medication discontinuation, dependence on medication, and lack of time and guidelines were identified in the literature as barriers to deprescribing.
Conclusion: Pharmacists' involvement in deprescribing benzodiazepines is crucial for optimizing medication therapy. This scoping review examines the pharmacists' role in benzodiazepine deprescribing. The findings contribute to enhancing healthcare outcomes and guiding future research in this area.

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OC5.7

IMPACT OF PHARMACIST-LED INTERVENTIONS IN PATIENTS ADMITTED TO EMERGENCY DEPARTMENTS: A SYSTEMATIC REVIEW

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Background: Pharmacists have worked in emergency departments (ED) since the 1970s. According to the updated guidelines of the American Society of Health-System Pharmacists (ASHP) [1], emergency medicine (EM) pharmacists are involved in many activities to improve medication safety and patient outcomes, extending beyond their traditional roles in the 1970s.
Aim: This study aimed to assess the impact of pharmacist interventions in the ED on economic, clinical, and humanistic (ECHO) outcomes.
Method: This systematic review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses recommendations. English-language randomized controlled trials (RCTs) investigating pharmacist interventions in the ED were identified through searches in PubMed, Ovid MEDLINE, and International Pharmaceutical Abstracts in August 2023. The information obtained included research design, pharmacist interventions, and patient outcomes. Data were synthesized based on the components of the ECHO model. The Cochrane risk-of-bias tool for randomized trials (RoB 2.0) was used. The review protocol was registered with PROSPERO (CRD42021293232).
Results: This study included 12 RCTs, most of which were conducted in tertiary care settings in various countries, with a focus on Australia (n = 4) and the United States (n = 3). Five studies demonstrated a low risk of bias. The three most implemented pharmacist interventions were medication reconciliation, medication history taking, and patient education. Despite the diversity in their implementation and reported outcomes, these interventions consistently improved medication safety and patient satisfaction. However, few studies investigated the humanistic impact of these interventions, and none reported economic outcomes.
Conclusion: Positive clinical outcomes are associated with pharmacist interventions in EDs. However, more studies are needed to demonstrate the impact of pharmacist activities in the ED on patient outcomes, especially on humanistic and economic outcomes.

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OC5.8

EVALUATING GENERAL PRACTICE PHARMACIST-LED MEDICINES REVIEWS ON PRESCRIBING APPROPRIATENESS AND PATIENT-REPORTED OUTCOMES

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Background: While the majority of pharmacist-led medicines reviews measure prescribing appropriateness, there is limited evidence of such reviews' effects on patient-reported outcome measures, especially in general practice settings, as these roles are not yet commonplace in most countries worldwide.
Aim: To investigate the impact of general practice pharmacist-led person-centred medicines reviews involving the '*7 steps to appropriate polypharmacy*' approach [1] on prescribing appropriateness, polypharmacy indicators (markers of high-risk prescribing) [2], and patient-reported outcome measures (PROMs).
Method: Four pharmacists performed person-centred medicines reviews for patients with hyperpolypharmacy (prescribed ≥ 10 regular medicines) and/or at high risk of medicines-related harm in ten general practices between January 2021 and December 2022. Recommendations were provided to the general practitioner and followed up with the patient and/or healthcare professionals as appropriate. Pre and post intervention: i) polypharmacy indicators were recorded, and ii) for a sample of patients, the Person-Centred Medication Appropriateness Index (PC-MAI) scores and PROMs were collected. Descriptive statistics were performed for patient characteristics and the outcome measures.

Results: Of the 1,471 included patients, the mean age was 76 years (standard deviation [SD]: 9.7), and the mean number of medicines was 13.8 (SD: 4.7) pre review (88.4% had hyperpolypharmacy). A total of 1,056 polypharmacy indicator occurrences were identified (mean 0.72/person), with ≥ 1 identified in 47.1% of patients. The most common occurrences were bleeding-related (29.5%), fall-related (22.8%), and renal-related (13.2%). The overall resolution rate was 70.7%; it was highest for electrolyte abnormality and renal domains (90.7% and 90.6%) and lowest for the falls domain (34%). Pre- and post-review PC-MAI scores were calculated for 194 patients, with a reduction in PC-MAI score for 99.5% of patients. The mean pre-review PC-MAI was 27.0 (SD 15.0; range 4–99) and post-review PC-MAI was 9.8 (SD 9.9; range 0–66). The mean PC-MAI reduction was 17.4 (SD 10.8; range 0–54) and 1.2 per medicine. PROMs were gathered for 179 patients, of whom 87.7% reported improvements in their understanding of their medicines, 63.1% in their experience of adverse drug reactions, 36.9% in their adherence, and 30.5% in the impact of medicines on their activities of daily living.
Conclusion: General practice pharmacist-led person-centred medicines reviews for patients with hyperpolypharmacy and/or at high-risk of medicines-related harm result in substantial improvements in prescribing appropriateness and several important patient-reported outcomes—including patients' medicines understanding, adherence, and medicines-related harm. Therefore, this study provides evidence to support the wider implementation of these comprehensive medicines reviews in regions where these pharmacist roles are currently not in place in primary care settings.

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Posters

PP001

TAFAMIDIS REAL WORLD DATA VERSUS PIVOTAL STUDY: A COMPARATIVE ANALYSIS OF EFFECTIVENESS

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Background: Tafamidis, a transthyretin stabilizer, has been recently approved for the treatment of transthyretin amyloid cardiomyopathy (ATTR-CM). The B3461028 trial data provide evidence for its efficacy and safety in a controlled and limited population, but real-world data offer insights into a broader, more heterogeneous patient population.
Aim: To compare findings from real-world retrospective analysis of our patients treated with tafamidis versus B3461028 pivotal trial.
Method: Retrospective observational study of tafamidis, carried out from March 2022 to May 2024 in a tertiary care hospital. We analyzed data from 15 patients treated with tafamidis in our hospital. We collected information from the electronic prescription program and medical records. We selected as outcomes the number of cardiovascular-related emergency department visits, the number of cardiovascular-related hospitalizations and the number of deaths.
Results: In the B3461028 trial, the patient population was characterized by a median age of 75 years and a higher proportion of males (91,3%). Our patients had a higher median age (83 years) and our cohort consisted of a higher proportion of males (66,67% males). The B3461028 trial demonstrated that tafamidis significantly reduced all-cause mortality and cardiovascular-related hospitalizations compared to placebo. The primary endpoint was measured at 30 months, with tafamidis showing a relative reduction in the risk of death by 30% (78 deaths) and cardiovascular-related hospitalizations by 32%. In our real-world population, no patient has yet reached 30 months of treatment. The median duration of treatment in our cohort was 12,9 months and the longest patient on treatment was treated for 26 months (still ongoing at the cut-off time of the study). In our real-world data we founded: 6 patients with cardiovascular-related emergency department visits (3 patients with 1 visit and 3 patients with 2 visits), 1 patient with a cardiovascular-related hospitalization, and 2 deaths (at month 3 and 7 from the beginning of treatment with tafamidis).
Conclusion: Our study shows a small cohort of patients with a short duration of treatment at the time of the study. So far, the results in the variables analyzed do not contradict the clinical benefit shown by tafamidis in the pivotal study. It is necessary to complete this study with more mature data in order to gain greater knowledge in this setting.
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PP002

IMPLEMENTATION OF AN AUTOLOGOUS SERUM EYE DROPS PROTOCOL FOR OCULAR SURFACE DISORDERS

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Background: Autologous serum eye drops (ASEDs) provide lubrication and promote epithelial healing. They are successfully used in the management of ocular surface disorders such as dry eye disease, persistent epithelial defects and neurotrophic keratopathy. The preparing-dispensing circuit take place in the Hospital Pharmacy Service.
Aim: The objective was to describe the protocol for preparation, storage and use of ASEDs as well as to analyze the activity carried out from December 2023 to May 2024 in the pharmacotechnical area (PA).
Method: To start treatment with ASEDs, medical prescription and informed consent are necessary. 7 blood tubes are required: 6 for eye drops and 1 for serology, which must stay for 30 min at room temperature and then centrifuged at 4000 rpm for 15 min. The ASEDs are done in laminar flow hood under aseptic conditions. First, the supernatant serum is collected using a syringe. Next, 1 mL of serum plus 4 mL of saline solution are added to eye dropper container, keeping the final concentration at 20%. 13 ASEDs are made per patient: 12 are dispensed quarterly and 1 is taken to the microbiology laboratory to verify the absence of microbiological growth.
Results: During the study period, 1820 ASEDs were produced and 140 ASEDs prescriptions were registered in a database by the pharmacist, which accounted for 34.5% of the activity in the PA. Regarding storage, ASEDs are labelled and placed in the freezer (at -20°C) until dispensed. ASEDs were dispensed to a total of 84 patients (average age: 54 ± 16 years; sex: 79.8% women). All patients were given an information sheet that included: indication, composition, dosage, administration, conservation (7 days open at 4-8°C and 3 months closed at -20°C) and adverse effects. The pathologies treated by frequency order were: 50.0% (n = 42) dry eye disease, 20.2% (n = 17) Sjogren's syndrome, 7.1% (n = 6) keratitis, 3.6%

(n = 3) neurotrophic ulcer, 2.4% (n = 2) herpetic ulcer, 2.4% (n = 2) glaucoma and 14.3 (n = 12) others. No eye drop sample analyzed showed microbiological growth.
Conclusion: The development of a protocol for preparation, storage and use of ASEDs has become an effective tool that ensures optimal sterility and safety conditions of these eye drops. During the study period, ASEDs elaboration accounted for practically a third of the activity in the PA. Dry eye disease was the most frequently treated pathology.

PP003

IMPACT OF AN ANTITHROMBOTIC THERAPY PROTOCOL AFTER URGENT CORONARY ARTERY BYPASS-GRAFTS: A RETROSPECTIVE STUDY

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Background: European guidelines recommend a dual antiplatelet therapy (DAPT) prescription after acute coronary syndrome (ACS), regardless of the revascularization method[1]. However, after coronary artery bypass grafts (CABG), DAPT is not prescribed systematically for different reasons, mainly because of concerns about bleeding risk.
Aim: The aim of our study was to assess whether the elaboration and the dissemination of an internal protocol on post-operative antithrombotic therapy prescription could improve European guidelines adherence in patients undergoing CABG after ACS.
Method: In this retrospective study we included patients who had surgery from January 2018 to December 2022. We separated the population in two groups, before (group 1) and after (group 2) an interdisciplinary team disseminated a protocol on postoperative antithrombotic therapy and applied it during the weekly ward rounds. We first analyzed its impact on guidelines adherence, defined as postoperative dual antiplatelet therapy (DAPT), single antiplatelet therapy (SAPT) and oral anticoagulation (OAC) or triple antithrombotic therapy (TAT) and then the impact on bleeding events during the hospitalization.
Results: In total, we included 259 patients, 83.8% were men and the median age was 67 [58;74] years. At baseline, group 1 (n = 152) and group 2 (n = 107) had similar demographic characteristics except for smoking status (p = 0.025) and ACS events (p = 0.007). Patients in group 2 had a significantly higher rate of guideline adherence compared to group 1 in terms of postoperative antithrombotic therapy (group 1 = 58.6% vs group 2 = 82.2%, $p < 0.001$), without increasing the number of bleeding events (group 1 = 5.9% vs group 2 = 1.9%, p = 0.130).
Conclusion: Our study showed that an internal protocol, the result of a multidisciplinary collaboration, allowed to significantly increase guidelines adherence in terms of antithrombotic therapy in ACS patients after CABG, without increasing bleeding events. More effort is needed to decrease single antiplatelet therapy in these patients who are at very high risk of subsequent ischemic events.

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PP004

A QUALITATIVE STUDY EXPLORING FACTORS THAT AFFECT PHARMACISTS' INVOLVEMENT IN ASTHMA CARE IN KUWAIT

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Background: Asthma is a respiratory disease caused by chronic airway inflammation in the lungs that constricts the airway and increases mucus production (WHO, 2020). Asthma is considered the most common chronic disease of people living in Kuwait (Abul et al., 2001). Pharmacists can play key roles to support health outcomes for patients with asthma.
Aim: The aim of this study is to identify factors that influence the involvement of pharmacists in asthma management in primary care centers in Kuwait.
Method: Pharmacists were recruited via convenience sampling and passive snowballing techniques. Qualitative, online semi-structured, interviews were conducted via Zoom. The topic guide consisted of several sections that included demographic characteristics, pharmacists' role in asthma management, significant barriers for pharmacists and collaboration with other healthcare professionals. Recorded interviews were transcribed verbatim and analysed utilizing NVivo® 11 software. Data were inductively analysed to identify themes using the Braun and Clarke framework. Ethical approval was obtained from Newcastle University and Ministry of Health, Kuwait.
Results: Fifteen interviews with pharmacists were conducted. The sample consisted of more females (n = 13) than males (n = 2). Most pharmacists had working experience of five-ten years as pharmacists in primary care centres (n = 9). Two main analytical themes identified 1) professional identity and 2) expectations. Participants appeared to have different level of knowledge about asthma medications and guidelines, and this create different professionals' identities that may affect their involvement in asthma care. Lack of trust from both physicians and patients prevent participants from providing asthma services. Also, pharmacists seeing themselves less significant than physicians might discourage them to collaborate with physicians. Patients' expectations also appeared to influence the services provided by pharmacists in asthma care. If patients only want to dispense their medication, the pharmacists will act as dispensers only and if they expect more from them, they will provide more services.
Conclusion: Both professional identity and expectations impact the role of pharmacists in asthma management in Kuwait. Future work is important to Investigate interventions to strengthen pharmacists' professional identity in asthma management and assess the impact of regulatory frameworks on pharmacist practice behaviors and implement and evaluate collaborative care models to optimise pharmacist involvement in asthma management. A limitation of this study is that pharmacists were mostly from the capital so findings may not be applicable to the whole of Kuwait.

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PP006

POTENTIALLY INAPPROPRIATE MEDICINES IN ELDERLY—WHAT A CLINICAL PHARMACIST SURVEY FOUND IN ONE NURSING HOME

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Background: The use of potentially inappropriate medications (PIMs) is an issue in nursing homes (NHs), with the potential to result in adverse health outcomes for residents. The use of PIMs represents a significant challenge in the improvement of prescribing practices and the reduction of the risk in elderly, as well as the development of clinical pharmacy services.
Aim: The objective of this study was to evaluate the utilisation (frequency and structure) of PIMs in one Slovak nursing home.
Method: All data were collected by the clinical pharmacist using an anonymised questionnaire method based on patients' and nurses' interviews and using medical records. The study did not include any interventions. Descriptive statistics were used to analyse the data. The prevalence of using and the structure of PIMs according to the EU(7)PIM list were identified and calculated both nominally, mean ± SD, median, mode, and proportionally (%).
Results: A total of 69 patients, 82.6% females, were interviewed at a nursing home over an approximately one hour. The study was conducted between January and May 2023. The mean age of the patients was 83.4 ± 6.99 years, with a median and mode age of 84 years. The total number of medications used by the patients was 835. The mean number of prescription drugs was 11.02 ± 4.34, median 11, mode 13 per patient. The mean number of nutritional and/or herbal supplements was 2.15 ± 1.67, median 2, mode 1 per patient. A total of 440 medications (52.7%) were considered appropriate, while 239 (28.6%) were identified as PIMs. The remaining medications were classified as questionable (n = 69, 8.3%) or not applicable (n = 87, 10.4%). The most frequently identified PIMs were medications from the ATC N (nervous system)—n = 95, 11.4% of all medications (e.g. benzodiazepine derivates and Z-drugs); ATC C (cardiovascular system)—n = 61, 7.31% (e.g. peripheral vasodilators and vasoprotectives); and ATC A (alimentary system)—n = 33, 3.95% (e.g. omeprazole, pantoprazole).
Conclusion: The prevalence of using PIMs among study population was relatively high. The study identified the problematic use of PIMs in nursing home clients and opened new avenues for the delivery of clinical pharmacy services to elderly patients in the nursing home settings.

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PP007

ADVANCING COMMUNITY HEALTHCARE: THE INTEGRATION OF PHARMACIST PRESCRIBING

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Background: Pharmacists are key players within the healthcare ecosystem ensuring equitable access to appropriate, quality and safe use of medications optimised to meet individual patient's needs. Pharmacist prescribing, within a collaborative practice context, facilitates timely patient access to treatment.
Aim: The aim of this study was to investigate concerns and benefits of pharmacist prescribing by analysing different pharmacist interventions and identifying scenarios in which pharmacist prescribing is opportune.
Method: Patients were recruited within a community pharmacy and divided into two groups based on the presenting complaint. Group A patients were given a pharmacist recommended non-prescription medication. Group B patients were referred to a general practitioner (GP) and the resulting intervention was compared to a hypothetical pharmacist recommended medication if the pharmacist could have prescribing rights. All patients were followed up, where the therapeutic outcome was determined.
Results: One hundred patients were included in the study: 56 patients (Group A) accepted the pharmacist intervention and 44 patients (Group B) were referred to a GP. From the Group A patients, 46 patients reported symptomatic relief within the week. From the 10 patients without symptomatic relief, 7 requested a doctor's appointment while 3 opted not to follow-up. Twenty-seven patients from Group B, reported symptomatic relief. In 22 cases out of the 44 Group B patients, the pharmacist would have prescribed the same medication as that actually prescribed by the GP. Reasons for disagreement include antibiotic resistance, contraindications of medications in patients with co-morbidities, use of steroids topically when not indicated, lack of prescribing gastro-protective drugs with long-term use of NSAIDs and disagreement in dosage forms, strength and duration of treatment. Broad-spectrum antibiotics were prescribed instead of a specific first-line antibiotic, according to the guidelines, resulting in an increase in antibiotic resistance.
Conclusion: The outcome of this study indicates concordance in clinical decision making and pharmacotherapy recommendation for prescription medication for 50% of the cases between the medical prescriber and the community pharmacist. Signals where pharmacist prescribing frameworks should consider additional patient safeguards include co-morbidities and risks of medications being recommended.
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PP009

ASSESSING PEDIATRIC MEDICATION DISCREPANCIES IN A TURKISH HOSPITAL: A CROSS-SECTIONAL STUDY

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Background: The World Health Organization (WHO) emphasizes the importance of medication reconciliation (MR) for patient safety and continuity of care during transitions urging countries to prioritize actions in this regard. Unintentional medication discrepancies (UMD) affect nearly every patient. Research on pediatric MR in Turkey is limited.
Aim: This study aims to address this gap by focusing on MR in a university hospital's pediatric ward, aiming to optimize resources and improve care quality.
Method: A prospective cross-sectional study was conducted from August 2022-February 2023, including patients < 18 years hospitalized for ≥ 24 h and using ≥ 1 medication during their stay. Upon admission, best possible medication history complied by clinical pharmacist(CP) This list was then compared with prescriptions on the first day of pediatric ward admission to identify discrepancies. Any identified discrepancies were recorded. UMD were classified as medication errors and classified using The Medication Discrepancy Taxonomy(MedTax). The ethical approval of the study obtained from the local Ethics Committee(11/05) Statistical significance was set at $p < 0.05$.
Results: A total of 105 patients were included, with 47.61% female and a median [IQR] age of 62.3[5–100] months. A 46.7% of patients had 1 to 3 comorbidities, and 73.33% were transferred from the emergency department. 518 discrepancies identified, comprising 471 intentional and 47 unintentional. In 23.8% (n = 25) of patients, had ≥ 1 UMD. The majority of UMD (85%) occurred at admission, the remaining 15% at transfers between services. Among chronic medication users (n = 35), 68.5% experienced UMD (5% for prescribed medication). 80% of patients with UMD had during hospitalization, 4% during transfers and, 16% during both hospitalization and transfers. UMD were observed in 28 different medications, predominantly in vitamins(n = 6) and proton pump inhibitors(n = 5). Significant differences were observed in comorbidities, length of stay, intensive care unit admission, and total medications between patients with and without UMD.
Conclusion: The results of our study indicate that UMD effectively identified by CP. The detection of MD by CP will contribute to the implementation of MR to improve the patient safety and transition of care.

PP010

PREFERENCES OF PATIENTS FOR COMMUNITY PHARMACIST-LED COUNSELLING SERVICE: A DISCRETE CHOICE EXPERIMENT STUDY

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Background: Provision of community pharmacist-led counselling service can promote medication adherence of the patients. Preferences of patients were rarely assessed in development of this service.
Aim: To assess preferences of patients with cardiometabolic disorders for community pharmacist-led counselling service to promote medication adherence by using a discrete choice experiment (DCE) study.
Method: This cross-sectional study was conducted in patients with cardiometabolic disorders (including hypertensive and/or diabetes) in community pharmacies and family health centres in Türkiye. Fifth grade pharmacy students conducted patient interviews in person on a tablet. Patients with non-adherent to their medications was identified by using Medication Adherence Report Scale-Turkish version (MARS-TR). Twelve choice (attributes of DCE: route of accessing the service, place for consultation, aid material, duration of the service; follow-up, additional service, cost) were generated. First choice was repeated at the end of the survey to test stability of preferences.
Results: Among two hundred seven (response rate: 86.2%), one hundred ninety-three participants passed stability test (rate of female:54.4% and median of age: 61). The rate of non-adherent to medications was 49.2%. According to preliminary findings, the most preferred service both in all patients and patients with non-adherent to medications was free, without appointment, in private area for 15 min, using video material, with follow-up in person, and brown bag check-up.
Conclusion: Patients' involvement in development of community pharmacist-led service could facilitate implementation of the service in the future.

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PP011

PREFERENCES OF COMMUNITY PHARMACISTS FOR PROVISION OF PATIENT COUNSELLING SERVICE: A DISCRETE CHOICE EXPERIMENT STUDY

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Background: Assessment of pharmacists' preferences is not common in development of patient counselling service in community pharmacy.
Aim: To assess community pharmacists' factors related to their intention, and preferences for provision of patient counselling service to promote medication adherence in patients with cardiometabolic disorders by using a discrete choice experiment (DCE) study.
Method: This observational study was conducted among Turkish community pharmacists. All interviews were conducted by fifth grade pharmacy students in person on a tablet. Theory based instrument was to assess factors related to their intention (1,2). Each service was generated by using following attributes: route of accessing the service; place for consultation, aid material, duration of the service, follow-up, additional service, cost. For stability test, two choices were repeated at baseline and end of the survey.
Results: Response rate was 65.8% (152 out of 231). Among them, 119 consistent responses were included according to stability test. Their intention was significantly associated with their beliefs about capabilities, social influences, beliefs about consequences, and moral norm ($p < 0.05$). According to preliminary findings, the most preferred service was free, with appointment, in private area for 15 min, using brochure material, with follow-up in person, and brown-bag check-up.
Conclusion: Findings of community pharmacists' preferences could be beneficial to facilitating development and implementation of the service.

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PP012

THE IMPACT OF THE CLINICAL PHARMACIST ON NUTRITION AND DRUG-RELATED PROBLEMS IN CRITICALLY ILL PATIENTS WITH RENAL DYSFUNCTION

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Background: Critically ill patients requiring treatment in the intensive care unit (ICU) often suffer from drug-related problem and malnutrition, which can be life-threatening. The pivotal role of the clinical pharmacist in routine patient care in the ICU is underscored, as it can significantly reduce nutrition and drug-related problems and improve patient outcomes.
Aim: This study was designed to detect, prevent, reduce or resolve nutrition and drug-related problems in intensive care patients with renal dysfunction through clinical pharmacy services.
Method: This prospective, observational study, consisting of observation and intervention periods was conducted in the ICU for a total of nine months. During the intervention period, clinical pharmacist recommendations regarding nutrition and drug-related problems were presented to the healthcare team. A protocol for the evaluation of enteral nutrition was developed and drug related problems (DRPs) were classified by PCNE Version 9.1.
Results: A total of 60 patients were included in the study. All patients' median (interquartile range) age was 73 years (60.5–80). A total of 504 DRPs (8.4/patient) were identified for all periods. During the intervention period, DRP was reduced by 50% ($p < 0.001$). The most frequently identified causes of DRPs were low doses (22.2%), drug-drug interactions (17%), and high doses (16.4%). Recommendations were made for 84.6% of the DRPs detected in the intervention period. The physicians accepted the majority (97.9%) of these recommendations. In the intervention period by the clinical pharmacist's recommendations, significant increases were observed in patients reaching their calorie and protein targets ($p < 0.05$). The most common recommendations were changes in feeding rate (66.7%), vitamin supplements (16.7%) and formula changes (7.7%). Physicians accepted the majority (96.2%) of the nutritional recommendations.
Conclusion: In conclusion, our study not only highlights the high incidence of DRPs and the increased risk of malnutrition among patients with renal dysfunction in the ICU but also emphasizes the crucial role of a clinical pharmacist in the ICU team. Their collaboration with other healthcare professionals and their active involvement in patient care were found to be instrumental in significantly reducing the frequency of DRPs and improving nutritional outcomes, thereby underscoring the relevance and impact of our research.

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PP013

EVALUATION OF ANTIMICROBIAL DOSES USING POINT PREVALENCE AT DIFFERENT TIME POINTS

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Background: Appropriate use of antimicrobials is important to ensure effective and safe treatment and to prevent the development of resistance. Evaluating antimicrobial treatments in randomly selected patients at regular intervals and identifying errors can help to provide audit and feedback.
Aim: To evaluate initial and maintenance doses according to body weight, renal function, drug interactions, and therapeutic drug monitoring.
Method: This retrospective, observational study was conducted at Hacettepe University Hospitals. Thirty patients who were followed by the Infectious Diseases and Clinical Pharmacy Department were randomly selected for evaluation during the four months of 2023 (January, April, July, and October). A clinical pharmacist reviewed the medication orders of the selected patients. Infusion times for parenteral therapies were also evaluated.
Results: In total, 120 adult patients were selected. Six patients received no antimicrobial therapy, and a total of 114 patients (243 antimicrobials) were included in the final analysis. Antibacterials (84.4%, n = 205) were the most commonly used antimicrobials (n = 243), followed by antifungals (11.9%, n = 29) and antivirals (3.7%, n = 9). The most commonly used antibacterial agents were carbapenems (n = 47, 23.4%), cephalosporins, polymyxins, and glycopeptides (n = 27, 13.4%). For 7.8% (n = 19) and 9.9% (n = 24) of antimicrobials, the initial and maintenance doses were inappropriate. In addition, antimicrobial doses were inappropriate for body weight in 3.6% of cases and for renal function in 14.5% of cases. Only 1.3% of antimicrobials were inappropriately chosen because of drug-drug interactions. The duration of infusion was also inappropriate in 2.6% of parenteral antimicrobials. Therapeutic drug monitoring was not performed in 67.4% of patients.
Conclusion: Although not frequent, there were dosing errors in the selection of initial and maintenance doses of antimicrobials. Dosing errors represent a significant aspect of drug-related problems, affecting both the effectiveness and safety of treatment. The lack of effective therapeutic drug monitoring and the failure to adjust doses accordingly when necessary remain among the most significant issues. Regular monitoring and clinical pharmacist review may help to reduce the risk of medication errors.
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PP014

PROSPECTIVE MULTICENTRE STUDY (RODEO) INVESTIGATING PATIENT-GUIDED DOSE REDUCTION OF TYROSINE KINASE INHIBITORS IN CHRONIC MYELOID LEUKEMIA

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Background: Tyrosine kinase inhibitors (TKI) dose reduction in patients with chronic myeloid leukemia (CML) patients can serve as safe maintenance therapy and aid in managing side effects.
Aim: This study evaluates the effectiveness of a patient-guided dose reduction intervention on treatment success.
Method: A preliminary analysis of the prospective single-arm study in 9 Dutch hospitals was performed. Adult CML patients on TKIs in major molecular response or deeper (MMR or DMR) $\geq$ 6 months were recruited. They received the intervention; an online patient decision aid, a shared decision-making consultation with a clinician, and personalized lower TKI doses for 12 months. Primary outcome: proportion of patients restarting initial TKI dose due to (expected) loss of MMR at 12 months follow-up. Secondary outcomes include patient-reported outcome measures.
Results: Currently, 149 patients are enrolled, mean age of 59 years (SD 13.8), 94 (63.1%) males. Median dose reduction provided from the initial dose at study entry is 30% (range 14–75%). At 12 months of dose reduction (n = 93), 11 patients (11.8%) experienced (expected) loss of MMR and resumed their initial dose.
Conclusion: Preliminary results indicate that a patient-guided dose reduction intervention is feasible and safe for at least some patients with CML at 12 months follow-up. Using a patient decision aid and shared decision-making better involves patients in this process, addressing their values and needs.

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PP015

REAL-WORLD EFFECTIVENESS OF APALUTAMIDE OR DAROLUTAMIDE IN PROSTATE CANCER PATIENTS

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Background: The second generation androgen receptor target therapies, including apalutamie (APA) and darolutamide (DARO), become the major treatment for prostate cancer. However, there remains limited real-world evidence evaluating effectiveness of these novel agents in Asian populations.
Aim: This study aimed to investigate the real-world effectiveness of APA or DARO on non-metastatic castration-resistant prostate cancer (nmCRPC) or metastatic castration-sensitive prostate cancer (mCSPC) patients, including prostate-specific antigen (PSA) progression and radiographic progression free survival of those agents.
Method: This was a retrospective cohort study included nmCRPC or mCSPC patients above 18 year-old and newly receiving APA or DARO from June 2021 to December 2022. Clinical outcomes were PSA and radiographic progression. We defined two PSA progression criteria according to Prostate Cancer Working Group 2 (PCWG2) and National Health Insurance criteria. We followed patients from initiation of therapies to the occurrence of outcomes, death, the last clinical visit, or December 31, 2023, which came first. We applied KM method to estimate median progression free survival (PFS) which was defining as compositing of PSA progression, radiographic progression or death.
Results: A total of 156 patients, of whom 96 (61.5%) were diagnosed mCSPC with median age 75 year-old (range: 51–96). The mean (median) baseline PSA levels were 173.4 (17.0), 273.8 (46.6), 20.3 (6.8) ng/ml among total population, mCSPC, and nmCRPC group, respectively. The median time to PSA progression according to PCWG2 criteria (increased $\geq$ 25% and $\geq$ 2 ng/ml above the nadir or no decreased) and National Health Insurance criteria (increased $\geq$ 50% and $\geq$ 2 ng/ml or no decreased) were 7.4 and 8.4 months. The median PFS among mCSPC and nmCRPC were not reached (NR) and 21.0 months in PCWG2 criteria, while the median PFS among mCSPC and nmCRPC were NR and 22.6 months in National Health Insurance criteria.
Conclusion: Among nmCRPC patients, the real-world median PFS was shorter than trial setting (SPARTAN and ARAMIS: 55.6 and 36.8 months). In mCSPC patients, further study with longer follow-up is needed.
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PP016

IMPACT OF PHYSICIAN TRAINING ON ADVERSE DRUG REACTION INTERCONSULTATIONS TO A CLINICAL PHARMACY SERVICE

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Background: The Good Pharmacovigilance (PV) Practices promoted by the WHO emphasize the role of hospitals in promoting training activities for professionals. In this sense, clinical pharmacists integrated in the healthcare team can promote this activity through the Clinical Pharmacy Services (CPS).
Aim: To determine the impact of in-service training (IST) to physician on suspected adverse drug reactions (SARDs) communication through interconsultation (IC) to a CPS.
Method: A longitudinal study was conducted in a 500-bed teaching hospital. IST was developed in the Department of Medicine in 10 services, with PV topics, especially historical reports of SARDs to CPS, since 2018. SARDs reported by physicians through IC (physician consultation to pharmacist) were evaluated for 7 years (2017 to 2023). The sample was convenience-based. The ICs registered in the CPS were studied. The IC generated pharmacotherapeutic follow-up (PF) and ADR reporting. Data were tabulated in SPSS 23, categorical and numerical variables were expressed as frequencies. The study was approved by the hospital's Ethics Committee.
Results: A total of 145 ICs were obtained with IST during the 6 years, distributed as follows: in the second half of 2018, 18; 2019, 57; 2020, 16; 2021, 4; 2022, 19; 2023, 30. Prior to the implementation of IST, 15 ICs were recorded in 2017 and 17 in the first half of 2018. All 10 services that received IST recorded at least 1 IC. The 16 ICs in 2020 were performed from January to March, thereafter the frequency decreased. Internal Medicine and Pulmonology services never discontinued ICs. In 2021 and 2022, the frequency of ICs remained low due to health priorities imposed by the pandemic. In mid-2022, with the resumption of IST, there was an increase in the frequency of IC in the CPS. Services that did not receive IST recorded IC such as Surgery and Emergency. This shows that reliance on the clinical pharmacist extends to other medical specialties. The 100% of the ICs had PF from the CPS, and the ADRs were reported to the National Center for PV. Currently, the IST on PV is part of the role of the clinical pharmacist and is performed at least once a year.
Conclusion: The role of the clinical pharmacist in IST maintained a sustainable frequency in increasing SADRs communication through IC. This not only reflects the trust in the clinical pharmacist among trained clinicians, but also extends to other services. Further research is needed on the adverse effects preventable by clinical pharmacist

interventions that may occur during pharmacotherapeutic monitoring and follow-up.

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PP017

COMMUNITY PHARMACISTS' PERSPECTIVES ON MANAGING DRUG-RELATED PROBLEMS IN AUSTRIA: A FOCUS GROUP STUDY

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Background: The integration of clinical practice in community pharmacy is associated with challenges that are influenced by factors including the utilisation of resources, dynamics of collaboration and pharmacists' professional identity. An exploration of these challenges could facilitate the development of sustainable clinical pharmacy practice in Austria.
Aim: The aim of this study was to examine the perspectives of Austrian community pharmacists in the context of managing drug-related problems and to explore influences on their behaviour.
Method: Four focus groups were undertaken with 23 Austrian community pharmacists. Participants were recruited using purposive sampling. A moderator guided the discussion on their experiences, opinions, and challenges regarding management of drug-related problems, and potential for change. Focus groups were audio-recorded, transcribed verbatim and analysed by two independent researchers using the Theoretical Domain Framework for coding.
Results: Pharmacists highlighted their proactive stance in improving their contribution to patient care. Participants articulated barriers to collaboration with physicians, allied health professionals and patients, as well as technological barriers within the pharmacy environment. The theme of readiness for clinical practice focused on group identity, the evolution of the professional role of the Austrian pharmacist, the alignment of current practice with the principles of clinical pharmacy, and pharmacists' ambivalent feelings about current legal boundaries. On the theme of leveraging resources, participants emphasised the importance of technological solutions as well as human and emotional resources in the management of drug-related problems.
Conclusion: The results of this study highlight the complexity of integrating clinical pharmacy into community pharmacy settings. Technological resources, changing role identity and improved collaboration are key factors in managing drug-related problems in community pharmacies. By developing a deeper understanding of daily practice, new areas for improvement were identified for sustainable clinical practice in Austria.

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PP019

PHARMACIST ROLES IN DELIVERING CARDIAC REHABILITATION: A SCOPING REVIEW OF THE INTERNATIONAL LITERATURE

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Background: Cardiovascular disease is a predominant cause of morbidity and mortality worldwide. Cardiac rehabilitation provided by a multidisciplinary team is a key secondary prevention intervention in this context. However, the specific role of the pharmacist in CR is currently unclear.
Aim: This scoping review aims to explore the various roles conducted by hospital pharmacists as part of outpatient CR by synthesising current international published literature.
Method: This scoping review followed the Joanna Briggs Institute methodology. Systematic searches were conducted in CINAHL (EBSCO), SCOPUS (Elsevier), and MEDLINE (Ovid) from inception to March 5, 2024. Articles were included if they detailed hospital pharmacist involvement in out-patient cardiac rehabilitation and excluded if they were in-patient based. Two reviewers screened titles/abstracts and reviewed full texts. Roles of the pharmacist were identified using thematic analysis, conducted by two authors. Results were reported in line with the Preferred Reporting Items for Systematic reviews and Meta-analyses extension for Scoping Reviews (PRISMA-ScR).
Results: The search yielded 428 records after de-deduplication, with a total of 7 studies being included in this review. Study locations included Canada, Egypt, Malaysia, the United States of America, and the United Kingdom. Study designs varied across the selected papers. Six were quantitative designs, with one qualitative study. The sample sizes in the studies ranged from 40–316 patients with follow up periods ranging from 3–27 months. All studies included pharmacists or pharmacy students intervening at specific intervals; on a weekly, twice weekly, fortnightly, six monthly and twelve-monthly basis post discharge. Key pharmacist roles included four key thematic areas. These were: 1) Patient education and counselling; 2) Medication management and adherence; 3) Identification and resolution of drug related problems and 4) Lifestyle and risk factor management.
Conclusion: Hospital pharmacist roles in cardiac rehabilitation services across different countries ranged from traditional medication focused practices to more specialised and individualised patient

orientated approaches. However, there is a dearth of research regarding a pharmacist's role in cardiac rehabilitation. Further research focused on further exploring the role of the pharmacist in cardiac rehabilitation is required to potentially pave the way for future specialist pharmacist roles in cardiac rehabilitation.
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PP020

THE ROLE OF PHARMACISTS IN INHALER THERAPY FOR ASTHMA PATIENTS

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Background: Asthma is a chronic respiratory disease that affects more than 300 million people worldwide. Inhalation therapy is a widely preferred method as it allows for the delivery of higher concentrations of medication to the airways. However, effective treatment is dependent on the optimal use of the inhaler device.
Aim: This study aims to raise awareness among asthma patients about inhalation therapy through information and education and to evaluate the role of the pharmacist in asthma control.
Method: For this purpose, asthma patients using inhaler devices who visited the pharmacy were evaluated over a three-month period from January to April 2024. During their initial visit, demographic and clinical data were collected from the patients and recorded on a data collection form. Patients' asthma control and inhaler device usage skills were assessed at the beginning and at follow-up (after 3 months) based on inhaler technique checklists and the Asthma Control Test (ACT) scale.
Results: A total of 56 patients participated in the study, but 2 patients were excluded from the analysis due to discontinuation of medication use, resulting in 54 patients being included (mean age = 53.48 ± 14.86 years). The study found that, regardless of the type of device used, the steps that patients make the most common mistakes in using inhalers are the same. The most common errors occurred at the steps of "exhale before inhalation" (74.07%) and "hold your breath for 10 s" (66.70%). A significant relationship was found between advanced age and incorrect use of the inhaler device ($p < 0.05$). Before the education, 18.52% of patients (n = 10) were using the inhaler device correctly, while after the education, 81.5% (n = 44) used it correctly ($p < 0.05$). There was an improvement of 2.78 ± 4.70 in ACT scores ($p < 0.05$).
Conclusion: The correct use of inhaler devices positively influences asthma control. The findings of this study emphasize the importance of inhaler technique education in asthma management and indicate the need for pharmacists to take an active role in this process.
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PP021

CLINICAL PHARMACISTS IN CARDIAC ARREST: AN ANALYSIS FROM A PRIVATE HOSPITAL IN COSTA RICA

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Background: Since 1972, clinical pharmacists in Cardiac Arrest Teams (CAT) have lowered in-hospital mortality rates by assessing medications and preventing errors. Yet, in Latin American and other region´s hospitals, their resuscitation involvement is limited due to diverse pharmaceutical practices, warranting more research on their roles.
Aim: The aim of this study is to elucidate the pivotal contribution of clinical pharmacists within the Cardiac Arrest Teams (CAT) in a private hospital in Latin America, with a particular emphasis on their role in managing code blue situations effectively.
Method: This retrospective observational study examined the role of clinical pharmacists within the Cardiac Arrest Team (CAT) at Hospital Clínica Bíblica (HCB), a 78-bed private healthcare center in San José, Costa Rica, from January 2020 to April 2024. We analyzed cardiac arrest reports of patients experiencing In-Hospital Cardiac Arrest (IHCA) across various units and conducted a survey to gather healthcare professionals' perceptions of CAT roles, including the clinical pharmacist's (CP) role and contributions. Data analysis, performed using Microsoft Excel, encompassed descriptive statistics to summarize collected data.
Results: A total of 75 cardiac arrest reports were reviewed. The median team size was 5 members and included physicians, nurses, patient assistants, clinical pharmacists (CPs), and respiratory therapists. Clinical pharmacists participated in 100% of the cardiac arrest codes. Although the hospital's CAT protocol does not stipulate the specific roles for all CAT members, we determined the clinical pharmacist's role consisted of timing both the administration of medications and the compression cycles (94.67%) and summarizing the code report to the hospital's medical management (98.67%). A sample of 15 physicians (10,71%), 75 nurses (53,57%), 34 patient assistants (24,29%), 11 pharmacists (7,86%), and 5 respiratory therapists (3,57%) responded to the survey. While there was a general understanding of the usual roles and responsibilities of each professional within the CAT, including the CPs, some variations were observed but it was highlighted the role of CPs in measuring the time of medication administration and compression cycles.
Conclusion: Through the analysis of cardiac arrest reports and a survey among healthcare professionals, it was found that clinical pharmacists actively participated in code blue situations, primarily ensuring timely medication administration and compression cycle timing. While there were variations in perceptions of pharmacist contributions, there was overall recognition of their importance, particularly in critical tasks.

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PP022

VIOLENCE IN THE WORKPLACE TOWARDS PHARMACISTS IN SAUDI ARABIA: CROSS-SECTIONAL STUDY

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Background: Workplace violence (WPV) is a prevailing global concern [1]. Pharmacists may be more vulnerable to WPV than other healthcare providers (HCPs) due to being the most trusted, approachable, and accessible healthcare workers [1,2]. However, in Saudi Arabia, there is little research on WPV among pharmacists working in different sectors.
Aim: This is a cross-sectional survey that examined the frequency of, consequences, and possible causes of WPV against pharmacists working in Saudi Arabia.
Method: All pharmacists with at least one year of work experience and who work in at least one of the following settings (hospitals, community pharmacies, primary care clinics, academia, pharmacy regulation, and pharmaceutical industries) were approached. An online survey was adopted from previous studies and distributed to a convenience sample of participants by social media using a link to a web-based survey platform in QuestionPro. The Statistical Package for the Social Sciences (SPSS) 28 was used for data entry and analysis.
Results: Three hundred and nineteen pharmacists participated in the study. The majority of participants were female (65%), and aged < 35 (81%). A total of 156 (49%) reported exposure to workplace violence. Most participants had experienced verbal abuse (43%), followed by threats (20%), bullying/mobbing (16%), and racial harassment (16%). The vast majority of the offenders were male (85%), and 67% of them were aged 21–45 years. The most commonly reported perceived causes of violence were lack of a penalty for the offender (22%), followed by lack of policies or reporting systems to prevent violence (19%), dissatisfaction with the service provided, and unmet service demand (18%). Participants' reactions towards violence varied; 29% said that they told the person to stop, and 17% took no action. Seventy-eight percent reported that the violence affected them negatively. As for consequences, the majority of participants reported feelings of hopelessness/disappointment (27%), decreased job satisfaction (28%), and decreased work performance (20%).
Conclusion: In Saudi Arabia, the risk of WPV events occurrence among pharmacists is high. Policymakers should understand the possible consequences and potential causes of such events. Interventions are required to safeguard pharmacists and create a safer workplace setting. The findings can guide the creation of appropriate policies, actions, and safety procedures to prevent and address WPV against pharmacists.

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PP023

SPORTS PHARMACY: THE NEW EMERGING ROLE OF COMMUNITY PHARMACISTS

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Background: Pharmaceutical care in sports is a new field for community pharmacists (CPs) focused on promoting pharmacotherapy, and clinical pharmacy-led services to athletes (1). Since CPs are often the first point of contact for healthcare advice and the supply of medications/products to athletes, they need to be well-prepared to meet these specialised needs.
Aim: The study aimed to investigate the perceptions of CPs in Greece regarding their new potential role in the Sports Pharmacy (SP) specialty.
Method: Qualitative research methods were used. Semi-structured interviews were conducted with 11 CPs (saturation was achieved) in Greece (Municipality of Patras, between October and November 2023). Before data collection ethical approval was received from the Pharmaceutical Association of Achaia, all anonymised interviews were audio-recorded, transcribed verbatim, and analysed thematically.
Results: Four main themes were identified: the Role and Knowledge of CPs regarding SP, the Future of SP, the Barriers CPs encounter regarding SP and CPs' Role in general. Although a number of the interviewees heard about SP for the first time during the interview, when they were asked to define it, they mentioned directly or indirectly that their professional role is essential for athletes: "I don't know anything about it. I have never heard of it before". Additionally, they stated that interprofessional collaboration is required "[…] The pharmacist's collaboration with the sports physician is needed". Furthermore, although some participants believed that the SP specialisation would not develop in Greece "I think it will not have a future in Greece […]", others expressed strong interest in their potential role in SP "I see it very interesting".
Conclusion: To our knowledge, this is the first study exploring Greek CPs' role in SP. The study's limitations included lack of time, unwillingness to participate, and CP's chosen population. Based on the increased CPs' clinical roles and responsibilities and the increased need for specialised pharmaceutical care for athletes, it is evident that Greek pharmacists have the potential to have an active role in SP.

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PP024

THE PREVALENCE OF, AND FACTORS AFFECTING, PRESCRIBING ANTIBIOTICS TO PREGNANT WOMEN ATTENDING OUTPATIENT CLINICS

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Background: Pregnant women have been identified as a unique population when dealing with prescribing an antibiotic. It is necessary to treat pregnant women for the infection, simultaneously; there is concern about the potential side effects on the fetus.

Aim: The present study aimed to assess antibiotic prescribing trends in pregnancy and whether it was cultivation directed from a sample of obstetrics and gynecology outpatient clinic attendees.
Method: An observational cross-sectional study was conducted in obstetrics and gynecology outpatient clinics at King Abdullah University Hospital, a teaching hospital in north of Jordan, over the period June to December 2021. The present study assessed the prevalence and factors affecting the antimicrobial prescription in pregnant women. Logistic regression model was used to identify independent, statistical, and significant predictors associated with prescribing antibiotics.
Results: The present study included 436 pregnant women. A total 43.6% of the pregnant women studied were prescribed an antibiotic; the most common (17%) antimicrobial prescribed was cefuroxime. Antimicrobial culture was carried out for 51.6% of the pregnant women studied, in which 17.9% had microbial growth in culture. The ratio of those who had microbial growth in culture and were prescribed an antibiotic equaled 60.3%. The independent predictors associated with the prescription of an antibiotic were emergency admission 90 days ago (odds ratio = 4.7), and ever taken antibiotics without a prescription (2.65). The following factors were protective of prescription of an antibiotic: medical procedure 48 h ago (odds ratio = 0.24), and suppressed immunity (0.31).
Conclusion: In summary, the present study addresses the trends of prescribing antibiotics to pregnant women and the uptake of cultivation procedures, and highlighted the need for cultivation-directed antibiotic prescribing in pregnant women and further research concerning the link between antimicrobial resistance and prescribing antibiotics, as well as drivers for prescribing antibiotics.
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PP025

DRUG-RELATED PROBLEMS IDENTIFIED IN PATIENTS ATTENDING PRIMARY HEALTHCARE CENTERS IN JORDAN

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Background: Drug-related problems (DRPs) are important medication management issues that are associated with adverse health outcomes. As there have been limited studies that have assessed the frequency of DRPs in primary healthcare in Jordan.
Aim: The present study aimed to capture DRPs present with medication use in primary healthcare settings.
Method: A cross-sectional observational study was conducted to assess the presence of DRPs among attendees of a number of public and teaching primary healthcare centers in different geographical locations in Jordan during the period June 2021–July 2022. A standardized procedure (1) was used to assess the DRPs present and identified DRPs were classified using the Hepler and Strand classification system, using an evidence-based approach (2). Factors associated with having a DRP were assessed using logistic regression analysis.
Results: The present study included 582 patients. A total of 59.4% of the patients studied had DRPs. The most common DRP identified was patient-reported ineffective medicine (28.7%) and non-adherence to medications (21.4%). Independent predictors of having a DRP were those who attended the healthcare center for a routine checkup were (odds ratio 2.112) and those who prescribed a multivitamin (odds ratio 2.882). Knowledge about medication indication for all or some medications was a protective predictor of having a DRP as opposed to no knowledge about the medication indication (odds ratios 0.134 and 0.459, respectively).
Conclusion: Results highlighted the significance of the DRPs in primary healthcare settings and as such efforts are highly recommended for increased provision of pharmaceutical care interventions in this healthcare setting.

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PP026

OPTIMIZATION OF PRESCRIPTION OF SUBCUTANEOUS AND INTRAVENOUS RITUXIMAB IN AN ITALIAN HAEMATO-ONCOLOGY CENTRE

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Background: After the introduction of the Subcutaneous (SC) administration of Rituximab (RTX), every clinician faced the dilemma of choosing whether to reduce the burden for the patient or keep using the more cost-effective treatment of Intravenous (IV) Rituximab. With the limited resources of the Italian National Health System a compromise had to be found.
Aim: An internal analysis deemed a progressive increase in prescription of SC RTX for Non-Hodgkin Lymphoma economically unsustainable in the long term. The aim of this abstract is to determine the effectiveness of an intervention taken in accordance between the Pharmacy and the Haematology Unit to reduce the use of this formulation by favouring instead IV RTX.
Method: The expenses linked to IV and SC RTX were analysed with an ABC-like method. Each preparation process was divided in 4 phases: prescription, therapy validation, preparation, and administration; each phase was confronted considering the costs increased by 20% to account for general expenses. For the IV RTX, it was estimated an average dose of 633.83 mg calculated from the 2023 prescriptions. All the accesses of 2022 and 2023 were extracted from the Chemotherapy Preparation Unit's software and then compared to assess the effect of the new internal directives. Also, scenarios with up to 80% prescriptions of SC RTX were simulated to study the avoided losses.
Results: In 2022 the Chemotherapy Preparation Unit registered 967 accesses, of which 54.2% for the preparation of IV RTX, and 45.8% consisting of SC RTX. By the 31st of January 2023 the new guidelines for internal prescription of RTX were implemented and it showed in the data, in fact, considering a total of 1059 accesses, 66.9% were prescriptions of IV RTX, and 33.1% of SC RTX, consisting of a total 20% worth of savings. In the scenario where it was simulated a constant growth in prescriptions of SC RTX, without the implementation of the new procedure guidelines, it was discovered

that, if left unchecked, the Haematology Unit would have spent up to 48% more than it did in 2023.
Conclusion: In conclusion, the cooperation between the Clinical Pharmacy and the Haematology Unit is fundamental to optimize the cost of the therapies available in an hospital centre, especially during these times when the budget is scarce and the medical needs among the population are increasing.
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PP027

NORTHERN IRELAND GENERAL PRACTICE PHARMACISTS' VIEWS ON INTRODUCING PHARMACY TECHNICIANS TO SUPPORT OPTIMISATION OF CLINICAL PHARMACY SERVICES

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Background: It is widely acknowledged that the healthcare system needs to evolve and seek innovative solutions to service provision. In terms of development of the pharmacy workforce, there is limited literature available on the scope for the introduction of pharmacy technicians (PTs) to General Practitioner (GP) practices in Northern Ireland (NI).
Aim: This study investigates the views and attitudes of NI General Practice Pharmacists (GPPs) on the introduction of PTs to the GP sector to optimise clinical pharmacy services and suggest a possible skill mix model for the GP pharmacy workforce.
Method: Data was collected via an online questionnaire comprising of three sections which was distributed via the Lead of NI GP Federation over a 2-week period. This was distributed to all GPPs working within the 17 GP Federations in NI. Potential roles for PTs were identified to suggest a skill mix model.
Results: GPPs undertake approximately 20 different tasks on a regular basis, 71% of GPPs felt PTs would be capable of undertaking some GPP tasks. Such tasks included: administration roles, medication reconciliation, clinical audits, counselling patients and vaccination services. Furthermore, 63% of GPPs felt PTs would help support optimisation of clinical pharmacy services within the GP sector.
Conclusion: The study concluded that there is an obvious need for expansion of the GP pharmacy workforce. The majority of GPPs in NI had a positive view towards introducing PTs. The introduction of PTs has the potential to optimise clinical pharmacy services, improve patient outcomes, ensure the best use of staff resources and result in greater job satisfaction for staff members working within the primary care sector.

PP028

AN EVALUATION OF EXPERIENCES OF GENERAL PRACTICE PHARMACIST INVOLVEMENT IN PRESCRIBING FOR CARE HOMES

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Background: General Practice Pharmacists (GPPs) have been present in surgeries in Northern Ireland since 2016[1]. The GPPs in a surgery with a particularly high number of patients in care settings have taken a pro-active role in managing the medications and assessment of the ordering system.
Aim: This qualitative study sought to explore the views and experiences of those involved in prescribing and in delivering medication services to nursing/residential homes of the contribution made by General Practice Pharmacists.
Method: An anonymised online survey was developed using the JISC™ platform, with sections tailored to surgery administrative staff, doctors, community pharmacists and care home staff. The surgery has five GP partners with 165 patients in ten care homes, looked after by six pharmacies. Participants were asked if GPP involvement improved communication, reduced phone calls required, decreased workload and improved patient safety. Specific groups were asked to select which GPP task they most valued, and which they would most like to see developed in the future.
Results: A response rate of 44% was achieved, with statistical analyses (Ordinary one-way ANOVA followed by Tukey's multiple comparison test). All groups asked agreed that GPPs reduced their workload, and all except community pharmacists agreed that they improved communication and patient safety. Of doctors, pharmacy staff and care home staff, all agreed that GPPs help with handling the monthly order request, converting medicines to liquids, and medication reviews. Doctors reported less benefit in acute medication requests, while community pharmacists reported less in medication reconciliations. Care home staff reported GPPs as having a significant role to play in deprescribing. All groups agreed that the role of the GPPs should be expanded into prescribing for urinary tract infections.
Conclusion: This study has consolidated the findings of previous research[2] in demonstrating satisfaction with the GPP role in primary care, and illustrated the part they play in communication among the different branches of the multidisciplinary team (MDT) involved in care home prescribing. Their significant input to improving patient safety is recognised by members of the MDT, as is their clinical competence and contribution to reducing the workloads of the MDT. These positive contributions demonstrate the sustainability of the GPP role in primary care.

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PP029

IMPLEMENTATION OF 12-HOUR URINE COLLECTION ON INTENSIVE CARE UNITS

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Background: Accurate assessment of renal function is needed in daily clinical practice. Mathematical formulas utilize serum creatinine to estimate renal function, but are often imprecise, especially in

critically ill patients. Alternatively, creatinine clearance could be measured through urine collection.
Aim: In this study, renal assessment based upon measured creatinine clearance (12-h urinary collection, $CrCl_{12h}$) was (1) implemented and (2) compared with estimated renal clearance.
Method: (1) Implementation of $CrCl_{12h}$ involved nurse training, programming formulas into the ICU patient data management system, and practical validation. (2) A retrospective study at AZ Sint-Jan Hospital in Bruges, Belgium, included adults admitted to the ICU in January 2024 without dialysis support. $CrCl_{12h}$ was compared with clearances estimated by Cockroft-Gault (CG) and CKD-EPI, as well as the body surface area (BSA) corrected formula ($CrCl_{12h_BSA}$). Spearman rank-order correlation assessed the association, while Bland–Altman plots evaluated bias and limits of agreement.
Results: 161 patients with 715 renal clearances were included. The median age was 68 years, and 63.7% were male. The median BSA was $1.87m^2$. A strong correlation was observed between $CrCl_{12h}$ and $CrCl_{12h_BSA}$ ($r_s = 0.970$; $p > 0.001$). A moderate correlation existed between $CrCl_{12h}$ and both CG ($r_s = 0.651$; $p > 0.001$) and CKD-EPI ($r_s = 0.675$; $p > 0.001$). Wide limits of agreement were seen for CG (− 155.3 to 78.4 ml/min) and CKD-EPI (− 107.6 to 176.3 ml/min). For impaired renal function (< 30 ml/min/$1.73m^2$) weak associations were noted between $CrCl_{12h}$ and both CG ($r_s = 0.399$; $p > 0.001$) and CKD-EPI ($r_s = 0.391$; $p > 0.001$). The negative bias indicates an overestimation of renal clearance by CKD-EPI (-13.13 mL/min) and CG (-17.55 mL/min). For augmented renal clearance (ARC, > 130 ml/min/$1.73m^2$) weak associations were found between $CrCl_{12h}$ and both CKD-EPI ($r_s = 0.180$, $p = 0.003$) and CG ($r_s = 0.236$, $p < 0.001$). The positive bias indicates an underestimation of renal clearance by CKD-EPI (91.66 mL/min) and CG (35.83 mL/min).
Conclusion: Estimated renal clearances showed weak to moderate correlations and poor agreement with measured $CrCl_{12h}$ in critically ill patients, especially in those with extreme renal functions. Estimation formulas tend to overestimate clearance in patients with impaired renal function and underestimate it in those with normal to high renal function. Although measuring creatinine clearance using urinary collections poses additional workload on the nursing staff, it is a valuable tool to ensure adequate drug dosing.
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PP030

ENHANCING DEPRESCRIPTION OF BENZODIAZEPINE RECEPTOR AGONISTS IN OLDER PATIENTS

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Background: Despite recommendation for short-term use of benzodiazepine receptor agonists (BZRAs) for anxiety and sleep disorders, long-term use persists. This leads to increased dependency and increased injury risks, especially among the older population.
Aim: The aim of the study is to assess the extent of deprescribing of BZRAs in older patients and to enhance deprescription by clinical pharmacist intervention.
Method: In a two-phase retrospective study at a rehabilitation hospital, pharmacy patient profiles of patients 65 years or over, and prescribed at least one BZRA, were reviewed. Phase 1 evaluated the extent of deprescribing and clinical pharmacist intervention documentation for patients discharged from January to December 2022. A researcher intervention was conducted with clinical pharmacists and periodic emails were sent as a reminder to promote deprescribing. Phase 2 assessed patients discharged during April 2023 to March 2024. The results of the 2 phases were compared using the z-test for two population proportions.
Results: The inclusion criteria were met by 173 patients in phase 1 (mean age 79 years, 58% female) and 115 patients in phase 2 (mean age 78 years, 69% female). In both phases, the 3 most common BZRAs prescribed were lorazepam, bromazepam, and diazepam. Deprescribing of BZRAs was conducted in 48% (n = 83) of patients in phase 1, of which 43% (n = 36) had complete deprescribing. In phase 2, deprescribing was conducted in 53% (n = 61) of patients, of which 61% (n = 37) had complete deprescribing. The increase in deprescribing following researcher intervention was not statistically significant. The increase in complete deprescribing was statistically significant (z-score 2.05, $p < 0.05$). A statistically significant increase in clinical pharmacist intervention documentation was observed from 39% (n = 68) in phase 1 to 66% (n = 76) in phase 2 (z-score 4.45, $p < 0.001$).
Conclusion: The researcher intervention was effective in increasing deprescribing and resulted in a statistically significant increase in complete deprescribing of BZRAs. A statistically significant increase in intervention documentation by clinical pharmacists was achieved.
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PP031

CROSS-SECTIONAL INVESTIGATION OF CLINICAL PHARMACISTS' OUT-OF-HOUR MEDICATION RETROSPECTIVE REVIEW AT VINMEC CENTRAL PARK HOSPITAL, VIETNAM

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Background: Medication review is important in ensuring patient care's safety and quality. At Vinmec, all medical orders are clinically reviewed by clinical pharmacists during working hours while those during out-of-hours are reviewed by trained nurses, then assessed by pharmacists the next working day. There is a need to evaluate this activity's impact on patient care.
Aim: To compare the prevalence of drug-related problems (DRPs) detected by clinical pharmacists during and after working hours. Secondly, to investigate the clinical and economic impact of out-of-hour medication orders which were retrospectively reviewed by clinical pharmacists at Vinmec Central Park hospital.
Method: A cross-sectional descriptive study was conducted from January 1, 2023 to May 31, 2023 at Vinmec Central Park hospital. The frequency and characteristics of DRPs during out-of-hour medication reviewed by clinical pharmacists were recorded and compared to that of working hours, using Pharmaceutical Care Network Europe (PCNE) classification. Clinical and economic impact of pharmacist interventions (PIs) were assessed independently by two experienced clinical pharmacists, using the Clinical, Economic and Organizational tool (CLEO tool).
Results: The rate of DRPs/total out-of-hour orders was 0.63% (67 DRPs/10,575 orders), with an average of 4 DRPs/100 patients, which was lower than the rate within working hours (3.17% with 984 DRPs/31,030 orders, with an average of 34.7 DRPs/100 patients). The patterns of DRP categories and pharmacological groups with DRP rates during out-of-hours and working hours were similar. Antibiotics, analgesics were the most common drug classes intervened. Pharmacist interventions were mainly on dosage optimization (54% 19/67), drug selection (28%), concentration and rate of administration (10%) adjustment. Out of 67 DRPs identified from out-of-hour orders, 64 PIs

(95.5%) were proposed by clinical pharmacists, of which 92.2% (59/64) PIs were fully accepted and 7.8% PIs were partially accepted by physicians. Most of the PIs had moderate clinical impact (43.8%, 28/64 cases) while 12.5% cases' impact was major. Regarding economic impact, most of the PIs led to 'decrease in cost' (45.3% 29/64), 32.8% had no cost change and 'increase in cost' with 21.9%. Overall, the PIs saved 6.475.663 VND, with an average of 101.182 VND per PI.

Conclusion: The prevalence of DRPs detected during retrospective review was much lower than that of working hours. This study showed that the review of out-of-hour medication orders by clinical pharmacists helped to detect important discrepancies in the medical orders, improving patient safety and clinical outcome. This activity also proved to mostly decrease patients' associated healthcare cost.

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PP032

OUTPATIENT PARENTERAL ANTIMICROBIAL THERAPY (OPAT) AT THE SINT-JAN GENERAL HOSPITAL, BELGIUM: EXAMINING OPAT ACTIVITY, PATIENT SATISFACTION AND FINANCIAL IMPLICATIONS

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Background: Outpatient parenteral antimicrobial therapy (OPAT) refers to the administration of a parenteral antimicrobial in an outpatient or ambulatory setting, allowing for continued treatment without the need for prolonged hospitalisation. The Sint-Jan General Hospital in Bruges has seven years of experience with OPAT in the home setting of the patient.

Aim: The aim of this study was to describe the OPAT experience at this tertiary care centre through a retrospective observational analysis of the OPAT activity from October 2017 to July 2023.

Method: Demographic and clinical data were extracted from electronic medical records. OPAT outcome, readmission and catheter related problems were analysed. Patient satisfaction was retrospectively evaluated for all OPAT episodes via a questionnaire. Responses to 28 statements were presented using a 5-point Likert scale in addition to two open questions. Internal consistency was analysed using Cronbach's alpha. Further, a cost calculation was performed to estimate the financial impact of OPAT on patient and hospital compared to prolonged hospitalisation. Lastly, a positive number of inpatient days/negative number of inpatient days analysis was conducted.

Results: OPAT was initiated in 157 OPAT patients and for 172 OPAT episodes, resulting in a saving of 4082 bed days with a median OPAT duration of 21 days. Urinary tract infection was the most prevalent type of infection (40,70%) with ceftriaxone being the most commonly utilized antimicrobial (42,44%). Outcome variables were evaluated for all OPAT episodes (n = 172), amongst which a successful outcome was found for 153 (88,95%) episodes. Unplanned admission was observed in 14,53% of patients. Although overall patient satisfaction was high and most patients did not report OPAT related problems, our survey identified multiple areas of improvement. The cost analysis revealed an estimated saving of €83,11 per OPAT patient in comparison to prolonged hospitalisation, rising to €283,58 if the patient would have been treated after implementation of the Belgian reimbursement policy in July 2023. The study also highlighted cost savings for the hospital.

Conclusion: This cohort study adds to the increasing observational data suggesting that OPAT is safe, cost-effective and acceptable for treating a wide variety of infections with a high patient satisfaction.

PP033

MENOPAUSAL WOMEN'S NEEDS FOR, AND OPINIONS ON, CARE IN GENERAL PRACTICE AND THE PHARMACY

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Background: The menopause is a life-changing event for women, who often experience symptoms such as vasomotor, genitourinary and cognitive functions. This impacts their quality of life. The menopause is a relatively unknown condition. Lack of awareness and knowledge on the menopause have been found in primary healthcare providers, including community pharmacists.

Aim: The aim of this study is to explore the experiences and needs of Dutch menopausal women regarding their healthcare by pharmacists and GPs.

Method: A primary-care based qualitative interview study was conducted with in Dutch women who experienced menopausal symptoms and had experiences with healthcare provided for the menopause by pharmacists and/or GPs. Patients were recruited using social media and the platform '*Vuurvrouw'*, a platform for menopausal women. Semi-structured interviews were conducted online or in-person in March and April 2024 and were transcribed verbatim. Thematical analysis was used to analyse the transcripts.

Results: Five main themes emerged, being the menopause itself, hormone therapy, information provision, healthcare and the role of the pharmacy. Women suffered from a broad range of symptoms, both physical and mental. Most interviewed women currently used hormone therapy. As a result, their symptoms decreased or vanished completely. Women did not feel well informed about the use of HT by their health care professional (HCP) and often struggled to get a prescription from their GP. They often had to find information themselves, mostly online. Most women currently did not seek the pharmacist for help with their menopausal symptoms. When asked if the pharmacy would be the right place for information provision, opinions varied among women. Overall, women felt unsupported and misunderstood as most providers saw the menopause as "*something they just had to get through"* or did not relate their symptoms to the menopause resulting in wrong treatment. Women expressed a high need to improve healthcare for menopausal women.

Conclusion: Dutch menopausal women feel that the information provision, support and knowledge they receive from community pharmacists and GPs is insufficient. The pharmacist does not have a prominent role in providing healthcare for menopausal women yet. There is a need for improved healthcare for menopausal women in the Netherlands. Awareness of the menopause must be raised to educate people and to eliminate the taboo on the menopause and its consequences.

References/Acknowledgments: We thank the women who granted us an interview for this study and *Vuurvrouw* for their support in the recruitment.
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PP034

DRUG THERAPY PROBLEMS IDENTIFIED AMONG NURSING HOME RESIDENTS AT THE HOME FOR THE ELDERLY – CENTRE, CROATIA

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Background: As people age, the number of comorbidities increases, leading to higher drug consumption. This makes elderly individuals more prone to experiencing drug therapy problems (DTPs), complicating the optimization of their medication regimens.
Aim: The objective of this study was to identify the type and frequency of DTPs and optimize therapy through comprehensive medication management services (CMM) for residents at the Nursing Home Centre.
Method: A prospective, pre- and post- interventional study was conducted at the Nursing Home Centre from October 2023 to May 2024. Participants included residents who were using at least one medication or dietary supplement. Individual consultations were conducted at the bedside for intensive care patients or in a designated area for other residents. Sociodemographic, anthropometric, and clinical data were collected by the pharmacist—by talking to the patient, reviewing the medical documentation, and consulting with the nurse and the general practitioner (GP). The identification of DTPs was based on the categorization according to Cipolle et al. [1].
Results: The study included 49 residents, of whom 43 (87.%) were women, with a median age of 83 (56–100) years. These residents used a median of 10 (5–26) medications and had a median of 10 (3–24) comorbidities. A total of 198 DTPs were identified during the first and second consultations, averaging 4.6 (± 2.3) per patient. The most common DTPs were "Unnecessary drug therapy" (24.7%) and "Dose too low" (20.2%). The medications most frequently associated with DTPs were paracetamol (10.3%), tramadol (9.6%), and pantoprazole (5.1%). The most common interventions were "Discontinuation of drug therapy" (31.31%), "Change of a dose regimen" (15.15%), and "Increasing the drug dose" (12.63%). Of the 132 interventions proposed to GPs, 109 (83%) were accepted, while interventions proposed directly to patients were accepted in 84% of cases. Overall, 139 DTPs (70%) were resolved after the first two consultations.
Conclusion: The high frequency of DTPs identified and the substantial acceptance rate of the proposed interventions highlight the importance of implementing CMM services in the elderly care facilities. Such services can significantly enhance patient care in these settings.

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PP035

THE POTENTIAL COLLABORATION WITH A CLINICAL PHARMACIST IN POLISH INTENSIVE CARE UNITS – PRELIMINARY SURVEY RESULTS.

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Background: Clinical pharmacy in Poland continues to develop despite the ongoing lack of law regulations [1]**.** Clinical pharmacists' activities involve collaboration with various hospital departments, but data on potential cooperation with Intensive Care Units (ICUs) is still lacking.
Aim: To assess the need and willingness to cooperate and potential tasks for the clinical pharmacist in ICUs from the perspectives of doctors and nurses.
Method: The study is based on an original national cross-sectional anonymous online survey opened in August 2023. The questionnaire primarily consists of Likert-type multiple-choice questions. Doctors and nurses working in Polish hospitals' ICUs were informed about the survey through social media channels, contact with societies devoted to intensive and critical care, and recruited mainly by snowball sampling. The normality of the data distribution was tested using the Shapiro–Wilk test, and data was analysed using Fisher exact and Mann–Whitney tests performed in PQStat v.1.8.6.
Results: A total of 53 respondents (30doctors and 23 nurses) participated in the survey. The mean participant age was 45.5 years (SD = 10.6),60.4% were female, 47.2% covered management positions. The majority of participants (86.8%) want to collaborate with a clinical pharmacist and 69.8% believe that professional contact with a pharmacist is necessary, especially according to doctors towards nurses($p = 0.021$) and ward nurses among all nurses($p = 0.015$). The top 5 tasks in which the pharmacist's involvement is desirable and/or necessary, according to the majority of respondents, included TDM (98.1%), staff education (86.8%), interaction analysis (83.0%), monitoring and reporting of adverse effects (81.1%) and providing medication information (77.3%). Staff working in units with more than 6 beds report a more frequent need for pharmacists to participate in ward rounds ($p = 0.041$). Participants without a PhD perceived a greater need for pharmacists to be involved in switching medication formulations ($p = 0.035$), antibiotic therapy ($p = 0.009$), sedation ($p = 0.012$) and parenteral nutrition ($p = 0.031$).
Conclusion: The results presented highlight the willingness of ICU doctors and nurses to work with a clinical pharmacist and indicate the particular clinical tasks in which they see a need for pharmacists' involvement. Our preliminary findings confirm the need for clinical pharmacists in hospital units and the necessity of multidisciplinary patient care.

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PP036

VANCOMYCIN INFUSION THERAPY – WHAT CAN GO WRONG?

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Background: The development of clinical pharmacy activities in Poland is underway; however, data on these activities are still poorly reported. Knowledge of the most frequent drug-related problems (DRPs) involved with vancomycin infusion therapy could significantly increase the efficiency of clinical pharmacy interventions (PIs).
Aim: The objectives of this study were to document clinical pharmacist daily routine interventions in patients with vancomycin infusion therapy, to identify the most frequently associated DRPs and to estimate physicians' acceptance of PI.
Method: A total of 100 therapy of adult patients undergoing intravenous vancomycin therapy lasting over 48 h were analysed by clinical pharmacist from October 2023 to May 2024. All patients underwent vancomycin therapeutic drug monitoring and the recommended for vancomycin AUC24 ratio was calculated by the pharmacist. The patients' demographic characteristics, drugs involved, wards, DRPs, pharmacist recommendations were recorded and whether or not the recommendations were accepted by the physicians.
Results: Only in 24 cases of therapy any pharmacist intervention was not necessary. 76% patients need the pharmacist recommendations, which were mostly related to vancomycin dose adjustment and administration mode optimisation. The identified DRPs were supratherapeutic dosage (89,5%), improper administration (44,7%), subtherapeutic dose (10,5%), adverse drug reaction (10,5%), drug-drug interactions (6,6%) and a failure to receive drug (2,63%). The rate of physicians' acceptance was 92% (6% refusals, 2% not assessable).
Conclusion: Clinical pharmacists contribute to preventing DRPs during vancomycin infusion therapy. PIs ensures optimization of drug dosing regimens and reduces the incidence and severity of side effects. The value of clinical pharmacy activities must be continuously demonstrated.
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PP037

PHARMACEUTICAL INTERVENTIONS FROM THE HOSPITALIZATION WARD: REAL WORLD DATA.

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Background: A new role of a clinical pharmacist (CP) in the hospital ward was established. The aim is to define the impact of this role on the communication between Pharmacy and physicians, as well as on the pharmaceutical interventions(PI) for hospitalized patients (HP).
Aim: Aims were to quantify the PIs performed following the establishment of a CP in the ward and determine the acceptance rate of these PIs.
Method: A new pharmaceutical care circuit for HP was designed: the main innovation is that the CP would directly discuss any discrepancies found in the prescribed treatments with the medical team on the ward and resolve discrepancies at the bedside with the patient. To determine whether this circuit achieved better communication results with the medical team and higher intervention acceptance rates, a prospective observational study was conducted from January 2024 to March 2024. All PI performed were recorded. The variables considered were: responsible service, type of PI, severity, therapeutic group referred to, and acceptance.
Results: A total of 151 PI were performed: 111 (73.5%) in the Internal Medicine department, which also includes more than half of the patients in our hospital, 19 (12.6%) in Traumatology, 12 (7.9%) in General Surgery, and 9 (6.0%) in other departments. The therapeutic groups with the most interventions were group N (nervous system) with 40 (26.5%) and group A (alimentary tract and metabolism) with 22(14.6%). The most common reasons for intervention were related to therapeutics with 50 (33.1%) therapeutic duplication, 36 (23.8%), and dosing error 22 (14.6%). A total of 134 PIs (88.7%) were accepted by the medical team.
Conclusion: The presence of the CP on the hospitalization ward has increased the number of PI in the treatment of HP, especially in the Internal Medicine ward. The acceptance rate of these PI is notable. More time and observation of results are needed for the conclusions to be generalizable to other departments and to guide organizational decision-making.

PP038

DAILY JOINT REVIEW OF ANTIMICROBIAL TREATMENTS IN HOSPITALIZATION WITH INFECTIOUS DISEASES PHYSICIANS.

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Background: Developing a new project to aim a close collaboration between pharmacist and infectious disease specialist and discovering what results can be aimed in hospitalized patients.
Aim: Aims were to quantify pharmaceutical interventions (PI) performed in antimicrobial treatments (AMT) in hospitalized patients within a new collaboration project with Infectious Diseases (ID) Department, and to determine the acceptance rate of the PIs.
Method: In January and February 2024, pharmacist prospectively localized broad-spectrum AMT that remain prescribed for a defined number of days in hospitalized patients. Patient medical records are reviewed. It is determined whether any aspect of the AMT can be changed or optimized. Furthermore, during the validation of medical prescriptions, other treatments suitable for PI may be identified. Potential PIs are documented through consultation with ID. Subsequently, during the daily face-to-face meeting, reviewed in depth, and definitive intervention is discussed. PI through this project group were recorded.
Results: 82 PIs were conducted on 74 patients, resulting in a monthly average of 41 PI and 1.86 PI/working-day. The median age was 82 years, and 53.6% female. Of these PIs, 53 were performed on patients from Internal Medicine, 14 in General Surgery, and 15 in other departments. Beta-lactams were the most intervened group with 34 (41.4%), followed by azithromycin with 12 (14.6%) and aminoglycosides with 9 (10.9%). Ten different kinds of PI were carried out, with the most frequent being dosage related with 20(24.4%), followed by antibiotic change due to the focus of infection with 15(18.3%) and sequential therapy with 14(17.1%). A total of 73 PIs were accepted, representing 89.0% of those performed. It was observed that all PIs regarding azithromycin involved discontinuation due to excessive treatment duration, whereas for aminoglycosides, all consisted of

dosage adjustment. Measures were initiated to prevent these errors from occurring in the future.
Conclusion: This project has allowed an increased pharmaceutical intervention in hospital AMT and closer collaboration with ID department. The acceptance rate of PI is notable and significantly exceeds our expectations. In contrast to other studies where the most of PI focus on dosage adjustments and sequential therapy, our data exhibit a wide variety of PI kinds. Systematic errors in the prescription of azithromycin and aminoglycosides have been identified, prompting the initiation of measures to prevent their occurrence.
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PP039

PHARMACEUTICAL CARE 360°. MEDICATION RECONCILIATION AND OPTIMIZATION IN HOSPITAL AND PRIMARY CARE.

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Background: Developing and assessing a project for medication reconciliation (MR) and optimization in chronically polypharmacy patients (CPP) that also facilitates continuity of care between hospitalization and Primary Care (PC) coordinated by Pharmacy.
Aim: To enhancing medication appropriateness and continuity of care for the CPP during hospitalization and in PC and assess the acceptance rate of pharmaceutical interventions (PI) in pharmacothe rapeutic reports (PTR).
Method: A MR circuit was designed for CPP upon their hospital admission, in coordination with Internal Medicine (IM) and PC. Patients are screened through criteria of age (> 75 years) and number of drugs in electronic prescriptions (> 10) by pharmacy nurses. For every patient hospital pharmacist (HP) performed a MR through a deep interview and write a PTR with recommendations addressed to IM physician. The patient is monitored during their hospital stay. Upon discharge, a new PTR is performed for the Primary Care Pharmacist (PP), tailored to the patient's new clinical situation. This PTR is addressed to Primary Care physicians (PCP) with new recommendations.
Results: From 02/2024 to 04/2024, PTRs were conducted for 30 hospitalized patients, of whom: 20 received their PTR addressed to the PCP, 5 deceased during admission or were transferred from another community, and 5 are pending TAR or are still hospitalized. A total of 66 PIs were recorded: 36 (56.2%) were conducted during hospitalization, and 28 (44.8%) were outpatient. The most common kind of PI during hospitalization was prescribing a medication after an unjustified omission or new indication, with 20/36 (55.5%). The most common kind of PI to the PCP was deprescription, with 20/28 (71.4%). During admission, 25/36 PIs conducted (69.4%) were accepted by IM, and 7/36 (19.4%) are under evaluation. Upon discharge, 12/28 PIs conducted were accepted by the PCP (42.8%), 1/28 was not accepted (3.6%), and 15/28 (53.6%) are pending assessment/ registration. Additionally, a qualitative improvement in medication information traceability was observed, as IM are using the PTR with the updated medication list as part of their reports, rather than using old reports.
Conclusion: The new circuit has enabled greater coordination between several clinical specialities. The acceptance rate of PIs is promising, considering the circuit's immaturity and the complexity of the patients. Further monitoring time is required to draw more evidence-based conclusions.
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PP040

ANALYSIS OF RATIONAL USE OF BEZLOTOXUMAB IN A TERTIARY HOSPITAL

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Background: Recurrences of *Clostridioides difficile* infection (CDI) are a frequent complication that generates a health and economic problem. Bezlotoxumab is a monoclonal antibody indicated to prevent the recurrence of CDI in patients at high risk of recurrence.
Aim: Bezlotoxumab is funded in patients over 65 years of age with severe CDI, CDI in the last 6 months, persistent diarrhea after 5 days of treatment, immunosuppressed and infected by hypervirulent strains. The aim of this study is the description and analysis of bezlotoxumab prescription in patients with recurrent CDI.
Method: The digital medical record *Diraya* and the hospital prescription program *Athos-Prisma* were used in this retrospective observational study. The prescription of bezlotoxumab during the last 4 years (April 2021-April 2024) was reviewed. The following variables were collected: demographics (sex, age), risk factors (antibiotic therapy and days of hospitalization in the last 6 months, treatment with PPI or antiH2, immunosuppression, IBD), number of CDI and treatment prescribed in each CDI.
Results: A total of 16 patients received bezlotoxumab during the study period: mean age 69.4 years (range 25–92) and 9 men (56.3%). The risk factors were: over 65 years of age (68.7%), immunosuppressed (100%), oncohematological (25%), recent antibiotic therapy (81.3%) and recent hospitalization (62.5%). Only 6 patients (37.5%) had a single episode of CDI and the rest (62.5%) had recurrences, 8 of whom had a 2nd recurrence, and of these, 1 had a 3rd recurrence. The prescription of bezlotoxumab took place during the primary infection in 7 patients (43.75%); in the 1st recurrence it was indicated in 4 patients (25%); in the 2nd recurrence, in 4 patients (25%); and in the 3rd recurrence, in 1 patient (6.25%). After the administration of bezlotoxumab, no further CDI recurrences were recorded in 12 patients (75%) and 4 (25%) continued with vancomycin cycles.
Conclusion: The choice of treatment was made on an individualized basis and the prescription of bezlotoxumab was restricted to cases of CDI with high risk factors for recurrence and based on the severity of the episode. The heterogeneity in the prescription of bezlotoxumab reveals the absence of a standardized protocol. However, all patients were eligible to receive bezlotoxumab under the funding criteria.

PP041

PRIMARY CARE TEAM MEETINGS REGARDING ELDERLY PATIENTS' PHARMACOTHERAPY: A REGIONAL PROJECT IN BRITTANY

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Background: The development and monitoring of individualized patient's therapeutic plan, as defined by the Council of Europe in its Resolution of March 2020, constitutes an effective way for structuring and promoting the clinical role of the community pharmacist, in an

interprofessional collaboration in primary care, and based upon a patient centred process.
Aim: The two main objectives of this pilot project are to promote *the quality of care* by the mean of the implementation of a pharmaceutical care plan according to shared therapeutic objectives, and to promote *the coordination in primary care* based on the general practitioner, pharmacist and nurse trio through multidisciplinary meetings called OPPA.
Method: This project was defined by a multiprofessional regional commission including pharmacists, primary care physicians, nurses, health insurance and regional health agency representatives. A support kit has been created including a methodological guide about the key stages of the meeting (e.g. partnership with patient); " *who does what* " before, during, and after the meeting; an optimization methodology for drug therapy based on the pharmaceutical care plan; a partnership agreement with a shared remuneration; a list of process, structural and outcome quality indicators; and a regional interprofessional training course program.
Results: Created in 2020 for elderly patients in nursing homes, the pilot project was extended in 2022 for elderly patients living at home, relayed by the new *Professional Territorial Health Community multidisciplinary primary health care centres*. In late March 2024, 97 meetings were organized i.e. a total of 237 therapeutic plans, involving 51 general practitioners, 35 pharmacists, and 17 nurses. The patients, with an average age of 82 years old, were all polypathological. Five to six concerted interventions were decided per file and per team, according to the following typology: *15% of interventions refers to medication overuse, 10% to medication underuse, 35% to medication misuse* as dose adjustments and mostly follow up interventions like biological or clinical monitoring. Cardiovascular pharmacotherapy, psychiatric pharmacotherapy, and vaccines are the main areas concerned by the interprofessional collaboration interventions.
Conclusion: Pharmaceutical care plan's formulation and update in multidisciplinary primary care meetings is an efficient means to improve the quality of medicines use and to reduce inappropriate polypharmacy (1 line of medication less per file after a meeting). There comes a great satisfaction of participants through virtuous mutual knowledge with the aim of patient's therapeutic outcomes improvment, and in an overall strategy of care and promotion of health. Several levers will help support its deployment, as interprofessional training and digital health tools.

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PP042

THE ANTIHYPERTENSIVE DRUG REGIMEN PATTERNS AT THE ADMISSION TO THE INTENSIVE CARE UNIT DETECTED BY A CLINICAL PHARMACIST

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Background: Antihypertensive drug prescribing patterns have been evaluated for many years (1). Conditions of patients vary at the admission to intensive care units so antihypertensive regimens should have to be changed in some cases. There is a need to reviewing these changes according to identifying causative situations in critically ill patients.
Aim: We aimed to identify the frequency of antihypertensive drug groups either monotherapy or dual therapy at the admission to intensive care unit and to detect if there was a relationship between comorbidities and selected antihypertensive drug regimens.
Method: This cross-sectional observational study was conducted in a sixteen bed tertiary care adult medical intensive care unit from 04 December, 2023 to 01 April, 2024 retrospectively. Patients who weren't applied any antihypertensive drug were excluded. The IBM SPSS (Statistical Package for Social Sciences) 23.0 software program was used for statistical analysis. Descriptive data of quantitative were given as percent and the relationship of qualitative data between two groups was determined by the Chi-Square Test. p value smaller than 0.05 is considered statistically significant.
Results: 54 patients had been diagnosed to hypertension were screened from electronical records. 10 of patients excluded because of having no antihypertensive agents at the admission. In total 44 patients (males of 61.4%), age of patients was normally distributed and the mean of age was 70.77 ± 11.11. 68.2% of patients were more than 65 years old. The most common admission causes were general status disorder (34.1%) and pneumonia (29.5%). The most common comorbidities were diabetes (40.9%), coronary artery disease (38.6%), cerebrovascular event (27.3%) and heart failure with reduced ejection fraction (18.2%) respectively. Serum creatinine (sCr) $>$ 1.2 mg/dL was detected among 47.7% of patients. The most common prescribed antihypertensives were dihydropyridines calcium channel blockers (DHP-CCB) (56.8%), beta blockers (BB) (50%) and alpha blockers (AB) (22.7%) respectively. The most common dual antihypertensive regimens were DHP-CCB/BB (25%), DHP-CCB/AB (18.2%) and ARB/HCT (11.4%) respectively. DHP-CCBs were more prescribed to patients less than 65 years than counterpart ($p < 0.05$). ARB and HCT were found in relationship with sCr $<$ 1.2 mg/dL ($p < 0.05$).
Conclusion: There was a tendency to ordering DHP-CCBs to patients independent from patients' comorbidities in this study. This tendency could be explained by less adverse effect related to DHP-CCB or their potency for antihypertensive activity. ARBs or HCTs were not given any patients with sCr $>$ 1.2 mg/dL dedicated to kidney impairment dosing schedules. Studies of antihypertensive choices for critically ill patients should be disseminated to generate new guidelines for critically ill patient population.

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PP043

THE ROLE OF THE PSYCHIATRIC PHARMACIST IN AN INTERDISCIPLINARY TEAM

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Background: Psychiatric pharmacists are advanced practice pharmacists who specialized in the treatment of serious mental illness.

They promote an interdisciplinary healthcare team and provide an expertise in comprehensive medication management.
Aim: To provide the scope of psychiatric pharmacists services to further develop the credential and promote increased access to medication experts for those with serious mental illness.
Method: Medline, Scopus, Google Scholar, and Google (for grey literature) were searched for the period of 2010 to 2024. Key search terms included: psychiatric pharmacist, mental health pharmacist, comprehensive medication management, medication therapy management, board certified psychiatric pharmacist. Data was extracted to determine various areas where psychiatric pharmacists practice.
Results: Board certified psychiatric pharmacists (BCPPs) are clinically trained pharmacists with specialized training and experience in psychiatric pharmacy and patient care. BCPPs are known in the United States to practice in areas of substance use disorder, increasing access to treatments including naltrexone and naloxone, pediatric psychiatry, improving treatment and monitoring in a very vulnerable population, long-acting injectable medications, prescribing and administering, clozapine utilization, including therapeutic drug monitoring and titration guidance, pharmacogenomics, and transitions of care and care coordination.
Conclusion: Psychiatric pharmacists are poised to assist with the shortage of behavioral health providers and contribute to the increasing number of persons living with serious mental illness. The training, education, and specialized expertise make this group of pharmacists uniquely equipped to assist in expanding care of mental health. While the number of current BCPPs is small in comparison to other healthcare professionals, the growing interest is one component of a larger healthcare system shift for caring for patients with psychiatric and substance use disorders.

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PP044

PROSPECTIVE MONITORING OF GLUCOCORTICOID-RELATED ADVERSE EFFECTS: GLUCOCORTICOID TOXICITY INDEX

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Background: The Glucocorticoid Toxicity Index (GTI) is a novel, outcome-based tool for the assessment of glucocorticoid (GC)-related adverse effects over time and their change between two points in time.
Aim: To evaluate and manage GC toxicity using GTI in patients with rheumatic diseases treated with GC.
Method: Patients with inflammatory arthritis, connective tissue disease, or vasculitis who used GCs (for $\leq$ 2 years) between January 2021 and June 2022 were included in this prospective study. Patients who had never received GCs were in the GC-naive group, and patients who had received GCs for less than two years were in the GC-experienced group. The clinical pharmacist provided recommendations for the GC-related problems as a result of the GTI evaluation. Generalized estimating equations were used to evaluate the GTI scores and associated factors, including cumulative GC doses.
Results: A total of 156 patients (48.7% GC-naive) with a mean age of 49.1 years were included. Over the 6 months, 68.3% of patients in the GC-naive group experienced worsening glucocorticoid toxicity, while 6.3% showed improvement. The most common toxicities were increases in blood pressure and body mass index. In the GC-experienced group, 44.9% of patients showed improvement in toxicity within 6 months, while 19.2% showed worsening. Both worsening and improvement were most common in the lipid and blood pressure domains in the GC-experienced group. High cumulative GC dose was associated with higher GTI in both groups ($p < 0.001$). In the GC-naive group, patients with vasculitis had higher GTI scores than inflammatory arthritis patients ($p < 0.001$). Clinical pharmacist interventions were about drug treatments (calcium/vitamin D supplements, bisphosphonates, antihypertensives, lipid-lowering drugs) initiation (n = 60), dose change (n = 9), drug treatment discontinuation (n = 3), drug change to alternatives (n = 3) and the instructions change for the use of GCs (n = 3).
Conclusion: The GTI has been shown to be effective in assessing glucocorticoid toxicity and measuring its change over time. It was observed that glucocorticoid-related toxicities were higher in patients who had not previously used glucocorticoids. The use of GTI was also beneficial in detecting problems such as osteoporosis and blood pressure. Participation of the clinical pharmacist in rheumatology teams may pave the way for individual assessment of glucocorticoid-related problems experienced by patients and more patient-centered management.

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PP045

PHARMACIST-LED AMBULATORY BLOOD PRESSURE MONITORING IN COMMUNITY PHARMACY

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Background: Ambulatory blood pressure monitoring (ABPM) is the gold standard for diagnosing hypertension and assessing 24-hour blood pressure (BP). ABPM compliments home BP monitoring (HBPM) by assessing white-coat hypertension, diagnosing masked hypertension, and providing information on night time dip and morning surge.
Aim: To appraise ABPM devices and assess the feasibility of pharmacist-led ABPM in community pharmacy.
Method: ABPM devices available on the market were appraised. Ten patients satisfying the inclusion criteria (newly diagnosed with hypertension, recent change in medication/dose, patient-reported non-compliance to hypertension management) were recruited by purposive sampling for 24-h ABPM from 4 community pharmacies selected

by convenience sampling. Two appointments, 24 h apart, were set up for each participant. A report with ABPM readings was generated for each participant and interpreted. Participants with mean 24-h BP ≥ 130/80 mmHg were referred to a physician using a referral letter.
Results: Nine ABPM devices were appraised, of which 3 were available locally. Based on cost and availability, 'GIMA 24-h ABPM + Pulse Rate Monitor' was selected, which has a BP measurement range of 0 to 290 mmHg and costs €435. After ethics approval, 10 participants accepted and 10 refused since they believed ABPM is burdensome (n = 6) or felt embarrassed being seen with the device (n = 4). Of the 10 participants (5 male, 5 female, age range 35–69 years), 4 were diagnosed with hypertension < 1 year and 5 perform HBPM. Successful 24-h ABPM was achieved in 9 participants. Each appointment required 30–60 min of pharmacist time, led to a report used by the pharmacist to provide patient recommendations, and ABPM results were provided to the participants. Four participants were referred to their physician due to elevated mean BP readings (24-h, nocturnal or diastolic BP). Application of ABPM was well-accepted, with challenges related to sleep disturbance and bruising reported by 4 participants.
Conclusion: Accessibility to ABPM in community pharmacies provides an opportunity for pharmacist-led enhanced patient monitoring and out-of-office BP management. Pharmacist-led ABPM service in community pharmacies in a collaborative care context is feasible and contributed to identifying patients requiring further assessment. Pharmacist and patient education on the importance of ABPM is essential for adequate hypertension management.

PP046

KNOWLEDGE AND AWARENESS OF COMMUNITY PHARMACISTS REGARDING CELIAC DISEASE: A CROSS-SECTIONAL STUDY

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Background: Celiac disease (CD) is a complex multisystem autoimmune disorder [1]. Community pharmacists have an important role in improving the quality of life for CD patients by sharing important disease and nutrition information with patients and in the identification of gluten in various prescription medications and over-the-counter products [2].
Aim: To assess the knowledge and awareness of gluten sensitivity (GS) and celiac disease, its complications and social life impact by community pharmacists in Istanbul, Türkiye.
Method: A descriptive, cross-sectional study conducted among community pharmacists in Istanbul, Türkiye using a structured, validated questionnaire to assess the knowledge and awareness of gluten sensitivity (GS) and celiac disease, its complications and social life impact. Data analysis was carried out using Microsoft Office Excel 2013 and the Statistical Package for the Social Science (SPSS) software for Windows version 23.0. Number data, whereas the mean, standard deviation, and median range were used to express numerical variables.
Results: The study included 79 participants with an average age of 35.3 ± 10.9 years and 86.1% of them were females. Among the participants, 29.1% reported having GS/CD, regarding family history. In terms of education level, 62.0% participants had a bachelor's degree, 37.9% participants had postgraduate degree. Regarding professional experience, 36.7% had it for less than 5 years, 20.3% for 5–10 years, 19.0% for 10–20 years, and 24.1% for more than 20 years, respectively. The mean scores for domains of questionnaire, GS/CD general knowledge was 1.81 ± 0.49, knowledge on GS/CD symptoms and complications was 2.40 ± 0.30, knowledge on nutrition of GS/CD was 2.30 ± 0.23, effect of GS/CD on daily and social life quality was 2.50 ± 0.42, knowledge and awareness of gluten-free market was 2.40 ± 0.41.
Conclusion: Pharmacists' knowledge and attitudes about GS/CD are at a poor level. Clinical studies are needed to increase the knowledge and awareness of community pharmacists who can play an active role in the delivery of gluten-free products to patients and to optimize their outcomes and quality of life.

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PP047

COMMUNITY PHARMACISTS' VACCINATION KNOWLEDGE AND ATTITUDES, AND THEIR IMPACT ON COMMUNITY VACCINE HESITANCY.

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Background: Although vaccinations are efficacious and widely accessible in many regions, the rates of vaccination and utilization of vaccination services are still below the recommended level among both healthcare practitioners and the general public (1).
Aim: This study aimed to observe and evaluate the knowledge, awareness, and attitudes of community pharmacists in the provinces of Samsun and Istanbul/ Turkey about vaccination.
Method: A cross-sectional observational study was done to analyze the characteristics of the participating community pharmacists. The research data was gathered over a period of four months, specifically from December 2023 to March 2024, through using a self-administered questionnaire. The survey consists of 50 multiple-choice questions (MCQs) that are divided into two categories: socio-demographic factors and participants' attitudes, awareness, and knowledge about vaccination.
Results: The study enrolled 498 pharmacists as participants. While 87.1% of pharmacists believe that vaccinations are efficacious in illness prevention, 22.7% of the participants expressed uncertainty over the safety of vaccines. 67.76% of participating pharmacists' knowledge questions were answered correctly. Although 90.6% of the participants acknowledge that Pneumonia presents a significant danger to persons aged 65 and above, only 64.4% of the entire survey group thinks that Influenza can jeopardize the health of adults. Concerning the tetanus vaccination, 37.4% of the population expressed uncertainty on whether adults are at a substantial risk of getting infected. Additionally, 14.9% of the participating pharmacists agreed with the statement suggesting that tetanus is rare, and thus, adults no longer need vaccination against it. A highly statistically significant link was seen between the experience of the pharmacists and their knowledge and attitude towards vaccinations ($p < 0.05$).
Conclusion: The study's findings indicate that pharmacists' knowledge of vaccinations is moderate. Hence, our research highlights the

necessity of providing education to raise the awareness of the pharmacist before the general community regarding vaccination.

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PP048

IMPACT OF CLINICAL PHARMACISTS ON ACHIEVING STRESS ULCER PROPHYLAXIS GOALS: A NON-RANDOMIZED CONTROLLED TRIAL

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Background: Stress ulceration poses a significant threat to critically ill patients, necessitating stress ulcer prophylaxis (SUP). Therefore, SUP is a widely used practice in intensive care units (ICUs) worldwide [1,2].
Aim: This non-randomized study evaluates the use of Stress Ulcer Prophylaxis (SUP) in Emergency (EICU) and General (GICU) Intensive Care Units, assesses the costs associated with inappropriate use, and highlights the impact of clinical pharmacists on improving adherence to SUP guidelines.
Method: A prospective, non-randomized controlled study was carried out in the EICU and GICU of a training and research hospital between 1 March 2023 and 1 September 2023. In the study, GICU patients were the observation group (OG) receiving routine care services. EICU patients were the recruitment guideline group (GG). In addition to routine care in the EICU (CG), SUP management was carried out according to the ASHP guidelines. The physician and clinical pharmacist jointly evaluated the patients to determine the suitability of their SUP indication. Adherence rates to ASHP guidelines and the costs associated with nonadherence were evaluated.
Results: A total of 196 patients were included in the study: 121 in OG and 75 in GG. 54.6% of the patients were male, and the reason for hospitalization was mainly surgical (52.6%). SUP applications were higher in OG (100%) than in GG (42.6%) ($p < 0.001$). The indication rate by the ASHP guideline was significantly higher in GG (100%) than in OG (54.5%) ($p < 0.001$). Dosage form adherence was significantly lower in the OG group (0%) compared to the GG group (100%) ($p < 0.001$), with all patients in OG receiving intravenous PPIs. The costs associated with PPI use for inappropriate indications and incorrect dosage forms were \$60 versus \$0 ($p < 0.001$) and \$321 versus \$0 ($p < 0.001$) in OG and GG, respectively. In total, cost savings of \$327 were achieved in the GG group.
Conclusion: Despite established guidelines, inappropriate use of SUP is common in ICUs. It is often administered for patients who do not meet clinical requirements, which can result in excessive costs and significant patient harm. Adequate adherence to guidelines and the proactive participation of clinical pharmacists might mitigate improper SUP in ICUs. Working together with the medical team, clinical pharmacists make sure that SUP is only administered when necessary, optimizing medication practices, improving patient outcomes and resource efficiency.

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PP049

CLINICAL PHARMACISTS' ASSESSMENT OF DRUG-RELATED PROBLEMS IN PATIENTS USING ANTIMICROBIALS

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Background: Drug-related problems (DRPs) often occur due to comorbidities and polypharmacy. Clinical pharmacists can contribute to reviewing medication orders, identifying DRPs, and providing cost-effective care. They also, participate in the multidisciplinary team to ensure appropriate antimicrobial selection, dosage regimens, and routes of administration (1).
Aim: Evaluation and categorization of the clinical pharmacist interventions in patients with antimicrobial treatment.
Method: This study was conducted in a tertiary care university hospital between December 2023 and February 2024. Patients treated with at least one antimicrobial were included. DRPs were identified by a clinical pharmacist who routinely participates in the daily intensive care unit rounds. Recommendations were provided to the responsible physicians regarding the identified DRPs and interventions were made. The problems, causes and interventions by clinical pharmacists for DRPs, their acceptance and the outcomes of the interventions were recorded. Then, DRPs and interventions were categorized using the Pharmaceutical Care Network Europe (PCNE) version 9.1 (2).
Results: A total of 42 patients were included in this study. The mean age (± SD) was 67 (± 15) years and 38.1% were women. One hundred DRPs were documented (2.4 per patient). The majority (70%) of DRPs were identified in patients with renal dysfunction. While 27% of interventions were related to antibiotics used by patients undergoing renal replacement treatments, 43% involved dose adjustments according to renal functions. Most of the interventions were related to carbapenems (31%), polymyxins (20%), and aminoglycosides (13%), respectively. The majority of the problems were classified as "effect of drug treatment is not optimal" (81%). The most frequent reasons were: "the dose of the drug substance being too high (32%); "the dose of the drug substance being too low" (24%); and "inappropriate drug form or formulation for the patient" (13%). The most common interventions were adjusting the dosage (65%) and changing the instructions for use (24%). Sixty-one (61%)

interventions were accepted and fully implemented. Finally, 60% of DRPs were solved.
Conclusion: The majority of DRPs were identified by the clinical pharmacist and most of the pharmacist's interventions were accepted by the physicians. In a hospital multidisciplinary team, clinical pharmacists play a crucial role in the management of antimicrobial-related DRPs, especially dose adjustment according to renal functions, by evaluating the treatments and recommending interventions. Involvement of the clinical pharmacists in multidisciplinary teams is important to improving patient outcomes and medication safety in the antimicrobial treatments.

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PP050

OPTIMIZING THE PRESCRIPTION OF PROTON PUMP INHIBITORS: IMPLEMENTATION AND ASSESSMENT OF A HOSPITAL STRATEGY

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Background: In our French teaching hospital, 40% of proton pump inhibitors (PPI) prescriptions are inappropriate at discharge. Hospital initiations are compliant, but renewals are made according to medication history without systematic questioning. Clinical pharmacy activities have proved their worth in optimizing drug prescriptions during hospital stays.
Aim: The aim of this study was to assess the impact of a clinical pharmacy strategy on the optimization of PPI prescribing, by assessing prescription compliance before and after the intervention of the clinical pharmacist, in terms of indication, dosage, duration of treatment, and by measuring prescribers' response to these interventions.
Method: A before/after study was conducted from February to April 2024. A pair of a pharmacy resident and a Master 1 student analyzed the compliance criteria of inpatients PPI prescriptions (indication, dosage, duration of treatment) before and after intervention. This intervention consisted of 2 actions: the pair reminded prescribers of the recommendations of French Health Authority during medical staff meetings, then the pharmaceutical team carried out targeted interventions during prescription analysis (by systematic notifications in the prescribing software, reinforced by phone calls).
Results: The study included 329 patients: 167 in the control group, 162 in the intervention group, among 5 adult medical departments. In the control group, median age and sex ratio were 76.04 years old and 1.04 In the intervention group they were 75.07 years old and 0.86; the mean number of chronic drugs at admission was 10 in the control group, and 8.5 in the intervention group. The indication was compliant in 58% of PPI prescriptions in the control group and 73% in the intervention group ($p < 0.05$). The treatment duration was compliant in 22% of prescriptions in the control group and 42% in the intervention group ($p < 0.05$). For clinical pharmacy activities, 43 pharmaceutical interventions were carried out: 70% on the PPI indication, which was either non-compliant or missing from the patients' medical records; 18% on inappropriate dosage for the indication, and 12% on the duration of treatment, which was always longer than indicated. Prescribers responded to 70% of the pharmaceutical interventions, 90% of them leading to deprescribing or dosage reduction.
Conclusion: In terms of indication, dosage and duration of treatment, the compliance of PPI prescriptions was significantly improved over the period with reminders of recommendations and pharmaceutical interventions.
This study demonstrates the importance of the key role played by clinical pharmacists in optimizing prescriptions, all the more so as the response rate to pharmaceutical interventions by prescribers is high.
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PP051

MEDICATION DISCREPANCIES: PRIMARY CARE PRESCRIPTIONS VS. PATIENTS REPORTED HOME TREATMENT IN CLINICAL INTERVIEW

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Background: The communication issues between doctor and patient can significantly affect pharmacotherapeutic adherence, with potential consequences on patient morbidity.
Aim: Determining the incidence of relevant discrepancies between the usual home treatment reported by patients and that prescribed by their primary care physicians in the outpatient electronic prescription system among surgical patients included in a pharmacotherapeutic reconciliation program at hospital admission.
Method: Prospective observational study conducted during 2024 at a first level hospital. The study included polypharmacy patients or those on high-risk medication treatments. Measured variables: number of prescribed medications, number of discrepancies, type of discrepancy and communication to primary care. Sources of information: Clinical History, electronic prescription system and interviews with patient-caregiver. A complete list of home medications was collected. It was then compared with electronic prescription system. Detected discrepancies were classified and communicated to primary care pharmacist for clarification with primary care physician.
Results: 114 patients were included, of whom 43 had at least one discrepancy between what was prescribed in the outpatient electronic prescription system and what the patients reported taking regularly at home. Analyzing these 43 patients, the average number of prescribed medications per patient was 7.6, and the average number of discrepancies detected per patient was 4.6. The most frequent discrepancy was different dosage/regimen (133), with 20% due to the patient's own decision and the rest due to verbal orders from the doctor. The next most common discrepancy was omission (54), with 60% due to the patient's own decision and the rest due to verbal orders from the doctor. All these discrepancies were communicated by the hospital pharmacist to the primary care pharmacist for their awareness, assessment, and resolution by the primary care physician responsible for the patient.
Conclusion: It is common to find differences between what the primary care physician prescribes to the patient in the electronic prescription system and what the patient actually takes regularly at home. Most discrepancies are due to decisions made by the patient, which the physician should be aware of. Sometimes, discrepancies

occur due to verbal orders from the physician that are not reflected in the electronic prescription system. Accurate patient treatment records are fundamental for reliable prescription systems.

PP052

DISPENSING AND ADMINISTERING LONG-ACTING THERAPY FOR HIV IN AN OUTPATIENT PHARMACY AT A FIRST LEVEL HOSPITAL

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Background: The recent approval of the LONG-ACTING HIV injectable antiretroviral treatment for HIV in Europe means a new therapy option. It may improve dosing convenience and avoid stigma associated with oral therapy.
They must be injected in a health centre, and in specific periods.
Aim: To provide this treatment in a 1st level Hospital. To achieve this, where resources are more limited than others of 2nd and 3rd level, coordination between different services and health professionals (pharmacist, nurses and doctors) has been necessary as well as the patient commitment.
Method: Internal Medicine Service estimated how many patients could be candidates, selecting those ones with adherence and commitment to attend an administration appointment. The main points of the programme for the patients are:
- Go to the outpatient consulting room in the pharmacy service with the prescription. The pharmacist will explain the dosage, side effects and other details regarding the treatment.
- It will be given an appointment with the pharmacy service nurse and the pharmacist to start the treatment.
- When the patient comes to get injected, he will be given the next appointment.
Results: After 14 months of the implementation of this treatment, it has been prescribed to 34 patients out of 298 on antiretrovirals (11,40%). Three patients refused to initiate the treatment when it was explained that they had to attend punctually for the appointment to get injected so they opted for taking oral treatment instead. 31 patients initiated successfully long acting injectable treatment. The only adverse reaction reported was discomfort at the injection site in two of them, both for rilpivirine. That reaction appeared only in the first and second administration and vanished from the third one on. In no case the treatment has been interrupted.
Conclusion: Due to the coordination between the nurses, outpatient pharmacists and Internal Medicine department and the cooperation of the patients involved, it is possible to offer a high-quality long-acting HIV therapy administered in a Hospital Pharmacy at a first level hospital.

PP053

DRUG-RELATED PROBLEMS IN PATIENTS WITH HEART FAILURE: INTERVENTION OF THE CLINICAL PHARMACIST

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Background: Patients with heart failure encounter many drug-related problems (DRPs) during their treatment[1]. Clinical pharmacists play an active role in reducing DRPs (total and per patient) detected in heart failure patients.
Aim: The aim of this prospective study was to identify DRPs observed by clinical pharmacists during the treatment of heart failure patients aged 18 years and older who were hospitalised in the cardiology service of a training and research hospital in Istanbul and to determine the role of the clinical pharmacist in the resolution of DRPs.
Method: The study was conducted in the cardiology ward between September 2023-March 2024 (3 months observation-3 months intervention period) in all heart failure patients, excluding those under 18 years of age, pregnant and breastfeeding women. DRPs observed in heart failure patients were identified by 2 clinical pharmacists and 2 cardiologists according to Hepler-Strand's classification system. Clinical pharmacists provided solutions to DRPs by reaching a consensus with cardiologists during the intervention period. The number of DRPs, which is the main outcome of the study, was compared between the two groups by Mann Whitney U test to it did not fit the normal distribution.
Results: According to the sample size calculation, a total of 90 patients were included in the study during the observation (n = 45) and intervention (n = 45) periods. A total of 162 DRPs were detected in 90 patients, 83 during the observation period and 79 during the intervention period. 66.05% of the detected DRPs do not take medication for an indication condition. Clinical pharmacists made 79 oral and written recommendations to cardiologists during the intervention period, 69 (87.3%) of them were accepted and 50 (63.3%) were applied. During the intervention period, the median value of DRPs detected per patient decreased from 2 IQR (1–2) to 1 IQR (0–1) ($p < 0.001$). The prescription ratios of the drug groups recommended in the guideline medical treatment of heart failure (GDMT) were evaluated[2]. During the intervention period, the prescription rate of mineralocorticoid receptor antagonists (MRA) increased from 35.6% to 57.8% ($p < 0.05$), and the prescription rate of sodium glucose co-transporter 2 inhibitors (SGLT2i) increased from 22.2% to 48.9% ($p < 0.001$).
Conclusion: Clinical pharmacists play an active role in the treatment process by providing consensus with physicians to resolve DRPs observed in heart failure patients. The intervention of clinical pharmacists statistically significantly increased the prescribing rate of medication groups involved in the treatment of heart failure patients and provided GDMT of heart failure.

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PP054

CONTEXTUAL ANALYSIS IN HOSPITALS IMPLEMENTING REDISPENSING UNUSED ORAL ANTICANCER DRUGS

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Background: Redispensing unused oral anticancer drugs is an upcoming strategy to reduce medication waste, and promote a more ecologically and financially sustainable healthcare. While its effectiveness has been proven [1], implementation of the intervention is not guaranteed since implementation is typically depended on contextual factors.
Aim: To identify contextual factors within hospitals implementing the redispensing of unused oral anticancer drugs to foster implementation.
Method: Individual semi-structured interviews were conducted live or online with physicians prescribing and pharmacy staff dispensing oral anticancer drugs to patients living with cancer within eleven Dutch hospitals. An interview guide was based on the COM-B model for behavior change to question participants about perspectives on the innovation, previous experience with implementing an innovation, and foreseen challenges and opportunities within the organization to implement redispensing. Data was thematically coded, then followed by a deductive approach guided by the COM-B model.
Results: Forty healthcare providers were interviewed, including 10 physicians and 30 pharmacy employees. Preliminary analysis identified six factors in the local context that influence implementation. Factors related to capability: 1) communication about targets and expectations of innovation to be implemented; 2) support during implementation from a project leader; 3) cooperation between physicians and pharmacy staff. Factors related to opportunity: 4) sufficient manpower needed to implement the innovation. Factors related to motivation: 5) motivated to promote sustainability within healthcare from societal perspective; 6) perceived need/opportunity/priority to implement sustainability approach.
Conclusion: Understanding of the environment in which redispensing unused oral anticancer drugs will be implemented is essential for successful implementation. The identified contextual factors play a role in the uptake of the intervention, and allows for tailoring an implementation strategy to fit the local context, thereby fostering implementation of redispensing oral anticancer drugs as standard care.

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PP055

OLD PEOPLE'S EXPERIENCES OF AND VIEWS ON A PHARMACIST INTERVENTION: A QUALITATIVE STUDY

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Background: In an on-going randomized controlled trial (RCT), we investigate whether an intervention from a clinical pharmacist in the transition of care can decrease the number of drug-related hospital readmissions. Knowledge about the patient perspective is valuable to understand the effects of the intervention on patients' health outcomes.
Aim: The primary aim was to explore the participants' experiences of, including views on, the pharmacist intervention in the RCT described above. The secondary aim was to acquire information regarding the functionality of the intervention.
Method: Semi-structured interviews were performed via telephone with persons who were involved in an intervention in the RCT. The participants were 75 years or older, living at home and had been discharged from hospital within the last 3–6 months. People with cognitive impairment were excluded. The interviews were audio-recorded and transcribed verbatim. The data were analysed using reflexive thematic analysis with an inductive approach [1].
Results: Out of the nine interviewed participants, eight were women. The mean age was 81.3 years (range 75–89 years). The findings regarding the respondents' experiences of the intervention show that the respondents were unsure regarding the need for the intervention. Nevertheless, the information provided by the clinical pharmacists was reported to be relevant, comprehensible and reliable. The possibility to ask questions about medications was stressed by many of the respondents as important. This involved information regarding specific medications, accessibility to medications, the possibility to familiarize themselves with their medication and keeping up to date in regard to changes in medications. Further, the respondents noted the lack of information at hospital as well as difficulties to take in the information provided at hospital.
Conclusion: The intervention can be seen as an important link for the elderly respondents involved in this study regarding accessibility to information about medications. Future research should involve the further study of the possibilities and challenges in supporting elderly patients with information concerning medications between hospital and primary care.

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PP056

KNOWLEDGE, ATTITUDE AND PRACTICES OF DENTISTS ABOUT ANTITHROMBOTIC MEDICATIONS: PRE-POST TEST

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Background: Patients using antithrombotic medications are a prevalent clinical challenge for dentists, due to managing this treatment during surgery is a regular issue.

Aim: Our study aims to assess dentists' knowledge, attitudes, and use of antithrombotic medications after an education given by a clinical pharmacist.
Method: This study was conducted between the 1st of February and the 1st of March 2024 in oral and dental health centers (Istanbul/Turkey). A self-structured survey consisting of 4 sections and 49 questions was administered twice in a face-to-face setting. Once before (pre-test) and once after (post-test) the 45-min training session given by the clinical pharmacist. Data were analyzed using SPSS.
Results: The pre and post-tests were completed by 205 (86%) of the 238 dentists. The mean age of the participants was 37.9 (27–58) years and 76% of them were female. The participants' knowledge of antithrombotic increased significantly after the education (13.2% vs 91.7%). While a small number of participants stated that aspirin (13.2%) and warfarin (13.2%) treatments should not be discontinued before dental treatment, this rate was quite high (for aspirin 89.3% and for warfarin 55.6%, $p < 0.05$) after education. While only 3% of the participants stated that they continued to use antithrombotics for non-invasive dental treatment before the education, this rate increased to 71% after the education. The percentage of participants who consulted the pharmacists about antithrombotic medication was significantly higher after the education (0.5% vs 14.6%, $p < 0.05$).
Conclusion: According to the results, the dentists' level of knowledge about antithrombotic medications increased after the education. Additionally, the attitude of dentists towards the use of these medications in dental treatment increased. In conclusion, we believe that the education provided by the clinical pharmacist may contribute directly to the dental practice and indirectly to the rational use of drugs.

PP057

HIGH BLOOD PRESSURE THERAPY ADHERENCE AND QUALITY OF LIFE IN CANCER PATIENTS WITH HYPERTENSION

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Background: Hypertension is one of the most common cardiovascular diseases and appears in approximately half of the cancer patients. Therapy adherence plays a significant role in the management of hypertension and the quality of life in cancer patients.
Aim: Our study aims to evaluate the quality of life and therapy adherence in cancer patients diagnosed with hypertension.
Method: This prospective and descriptive study was conducted between January 8, and May 8, 2024, at an outpatient clinic in Istanbul, Turkey. Cancer patients over 18 who were diagnosed with hypertension and agreed to participate in the survey were included in the study. Consent was obtained from the patients, and sociodemographic information was recorded. The Turkish version of the Functional Assessment of Cancer Therapy-General (FACT-G) and the Hill-Bone Compliance to High Blood Pressure Therapy Scale (HBCHBPT) were once administered face-to-face to the patients. Data analysis was performed using SPSS.
Results: The median age of the 40 patients was 64.5 years (range: 47–77 years), with 75% being female. Sixty-two percent of the patients were non-smokers. The median duration of antihypertension treatment was 6.5 years. All patients had at least one comorbid disease (median 2, range: 1–5). The median HBCHBPT score was 7 (range: 0–15), while the median FACT-G score was 73.5 (range: 34.5–97.5). The total scores for physical well-being (PWB), social well-being, emotional well-being, and functional well-being were 15 (range: 3–28), 23.8 (range: 8.8–28.0), 15 (range: 4.8–24.0), and 17.5 (range: 2.8–28.0), respectively. There were no significant correlations between therapy adherence scores and the patients' sociodemographic. However, a negative correlation was observed between quality of life and the duration of hypertension treatment (Spearman's rho: -0.358, $p < 0.05$)."
Conclusion: According to the results, the therapy adherence score of the patients appears slightly elevated. Additionally, the quality-of-life score was found to be relatively low, potentially influenced by the duration of hypertension treatment. Considering that multimorbidity can impact treatment adherence and quality of life, we believe that optimal pharmaceutical care for patients with high blood pressure necessitates a team approach involving a clinical pharmacist.
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PP058

QUALITY OF LIFE IN GERIATRIC PATIENTS USING PROTON PUMP INHIBITORS AND NON-STEROIDAL ANTI-INFLAMMATORY DRUGS

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Background: Proton pump inhibitors (PPIs) or non-steroidal anti-inflammatory drugs (NSAIDs) are frequently prescribed drugs for geriatric patients. Ensuring the rational use of these drugs will contribute positively to treatment outcomes, thereby increasing patients' quality of life.
Aim: Our study aims to evaluate the quality of life and medication use of geriatrics-prescribed PPIs and NSAIDs.
Method: This prospective and descriptive study was conducted between January 1 and April 1, 2024, at a community pharmacy in Istanbul, Turkey. Participants aged 65 and over who were treated with PPIs and NSAIDs were included. Consent was obtained from the participants, and sociodemographic information was recorded. The Turkish version of the "Control, Autonomy, Self-realization, and Pleasure in the Elderly (CASP-19) (1) scale was once administered face-to-face to the participants. The lowest total score that can be obtained from the scale is 0 and the highest score is 39. Data analysis was performed using SPSS.
Results: The median age of the 50 patients was 74 years (range: 65–100 years), with 60% of them being female. Most of them (94%) had at least one comorbidity. The most common comorbid diseases in the patients were hypertension (66%), diabetes (24%), and hyperlipidemia (24%). While pantoprazole (14%) was most frequently prescribed in the PPIs group, ibuprofen (10%) was prescribed in the NSAIDs group. The median scale score was determined to be 26.5 (range: 2–38), and the Cronbach alpha value was 0.865. A significant positive correlation was detected between the number of medications prescribed and quality of life (Spearman's rho: 0.307, $p = 0.039$).
Conclusion: The high Cronbach alpha value suggests strong internal consistency in the scale measurement. Importantly, a significant positive correlation was found between the number of medications prescribed and quality of life. These findings shed light on the demographic characteristics, medication patterns, and health outcomes within this patient cohort, emphasizing the importance of tailored and comprehensive healthcare strategies for geriatrics. Further research may elucidate additional factors influencing the quality of life in this population.

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PP060

EVALUATION OF POTENTIAL SIDE EFFECTS OF ANTIPSYCHOTICS IN A COMMUNITY SETTING

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Background: Antipsychotics are commonly prescribed to treat various psychiatric conditions, including schizophrenia, bipolar disorder, and severe depression with psychotic features. While these medications can be effective in managing symptoms, they also come with potential side effects that can impact overall treatment outcomes.
Aim: Our study aims to evaluate medication uses and potential side effects in patients using antipsychotic drugs.
Method: This prospective and descriptive study was conducted between the 10th of February and the 10th of May 2024 in a community pharmacy in Istanbul, Turkey. Patients over the age of 18 using antipsychotics were included in the study. Consent was obtained from the patients, and sociodemographic information was recorded. Potential side effects of antipsychotics were evaluated using the Turkish version of the Glasgow Antipsychotic Side-effect Scale (GASS) (1). The questionnaire was administered face-to-face only once. Data were analyzed using SPSS.
Results: The median age of the 47 patients was 41 years (range:19–87 years). Over half of the patients (59.6%) had at least one comorbid disease. The median duration of antipsychotic treatment was 8 years (range:1–43 years), the median number of antipsychotics was 3 (range:1–6), and the median number of total medications was 4 (range: 1–10). There was a significant positive correlation between the total number of medications and age, and the duration of antipsychotic treatment (Spearman's rho = 0.601, $p < 0.0001$; Spearman's rho = 0.425, $p < 0.05$, respectively). The duration of antipsychotic treatment in those with comorbid diseases was longer than in those without comorbid diseases (median 10 years vs median 6 years, $p < 0.001$). It was observed that the duration of antipsychotic treatment in those who were married was lower than not married (median 7 years vs median 9 years, $p < 0.001$). The median GASS score was determined to be 53 (range:26–77). There was a positive correlation between the total number of medications and the GASS score (Spearman's rho = 0.411, $p < 0.05$).
Conclusion: According to the results, age, marital status, duration of antipsychotic treatment, and comorbid disease are among the factors affecting the total number of medications. In conclusion, potential side effects are important considerations in the management of patients using antipsychotic medications. Pharmacists should regularly monitor for side effects and collaborate with patients to optimize treatment outcomes while minimizing risks.

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PP061

THE KNOWLEDGE OF RATIONAL ANTIBIOTIC USE BY INDIVIDUALS IN A COMMUNITY SETTING.

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Background: The rational use of antibiotics provides indispensable benefits for the patient by reducing morbidity and mortality. Pharmacists are valuable health professionals who can undertake this task as the closest health advisors.
Aim: Our study aims to evaluate the level of rational antibiotic use of participants who apply to the pharmacy for any reason.
Method: This prospective and descriptive study was conducted between December 1, 2023, and April 1, 2024, in a community pharmacy in Istanbul, Turkey. Individuals over the age of 18 who visited the pharmacy and agreed to participate in the survey were included in the study. Consent was obtained from the participants, and sociodemographic information was recorded. The "Antibiotic Use Scale (AUS)," validated in Turkish (1) and consisting of 19 questions, was administered face-to-face to the participants once. The score range is 5–95, with higher scores indicating more rational antibiotic use. Data analysis was performed using SPSS.
Results: The median age of the 50 patients was 36.5 years (range: 18–95 years), with half of them being female. The median scale score was determined to be 63.5 (range: 53–72), and the Cronbach alpha value was 0.663. There were no significant correlations between age and sex on the score. While 66% of the participants responded with agree/strongly agree to the statement "I feel more comfortable when I take antibiotics," the majority (70%) responded with disagree/strongly disagree to the statement "Like some people in society, I believe that using antibiotics is always beneficial." Sixty-two percent of the participants stated that they disagreed with the statement "I always think that the use of antibiotics will accelerate recovery in cases such as colds."
Conclusion: According to the results, the scores of the AUS were low. Although the participants stated that they felt better with the use of antibiotics, they also indicated that antibiotics were not always the right option. We believe that pharmacists will contribute to the best management of rational antibiotic use through accurate information and drug counseling.

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PP062

KNOWLEDGE AND ATTITUDES OF THE PUBLIC REGARDING THE USE OF DERMOCOSMETICS IN A COMMUNITY SETTING

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Background: Dermocosmetics are formulated to provide therapeutic benefits and the rationale for their use lies in their ability to address specific skin concerns while offering cosmetic benefits. Increased public knowledge about dermocosmetics is driven by information accessibility, education campaigns, media coverage, and influencer endorsements.
Aim: Our study aims to evaluate the knowledge and attitudes of the public regarding the use of dermocosmetics.
Method: This prospective and descriptive study was conducted between December 1, 2023, and April 1, 2024, in a community pharmacy in Istanbul, Turkey. Individuals over the age of 18 who visited the pharmacy and agreed to participate in the survey were included in the study. Consent was obtained from the participants, and sociodemographic information was recorded. A self-structured survey was created by the researchers. The survey contains 11 items that evaluate knowledge and attitude regarding the rational use of dermocosmetics and was administered face-to-face to the participants once. Data analysis was performed using SPSS.
Results: The median age of the 50 patients was 31.5 years (range: 18–59 years), with most of them (80%) being female. Sixty-six percent of the participants stated that they used a skincare product as a dermocosmetic, and 42% stated that they encountered at least one side effect related to the use of dermocosmetics. While 44% of the participants stated that they preferred the dermocosmetics according to the brand of the product, 38% stated that they obtained information about the use of dermocosmetics from the pharmacist. Additionally, half of the participants stated that there was a difference between dermocosmetics and cosmetics, with 48% defining the dermocosmetic product as a semi-medicine.
Conclusion: According to the results, although the use of dermocosmetics is quite common, it has been observed that the distinction between dermocosmetics and cosmetics is not always clear. Moreover, despite being categorized as semi-drugs, consultation with a pharmacist remains relatively low. Pharmacists are vital healthcare professionals who play a crucial role in informing society through communication networks. We believe that pharmacists will contribute to promoting the optimal rational use of dermocosmetics through accurate education and monitoring.
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PP063

CLINICAL AND ECONOMIC BENEFIT OF PHARMACIST PARTICIPATION IN MELANOMA CLINICAL TRIALS

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Background: Melanoma is one of the most aggressive forms of skin cancer and its incidence in Spain has been increasing in recent years. Clinical trials developed on this pathology offer novel pharmacological alternatives that achieve longer progression-free survival compared with reference treatments. In these studies, the role of the pharmacist is essential.
Aim: To identify melanoma clinical trials conducted in a third-level hospital and describe pharmaceutical care actions performed. Other objetive was to calculate the avoided cost in drugs derived from the participation of melanoma patients in studies, based on the drug free support provided by the sponsor of each clinical trial.
Method: A retrospective analysis was made of all melanoma clinical trials initiated in the hospital from January 2021 to March 2024. Variables collected were: trial phase, investigational drug, number of subjects enrolled, number of treatment cycles received and pharmaceutical interventions carried out. Cost saving was calculated using the acquisition price of the drug (laboratory sale price—discount + VAT) that the patient would have received if they had not participated in the study (the Oncology Department was contacted to discuss the standard therapeutic alternative of choice). Information was obtained from Fundanet® and Farmis_Oncofarm®.
Results: Were analysed 3 clinical trials, all of them in phase III and with therapeutic monoclonal antibodies (mAbs) as investigational drug. 26 subjects were included, receiving a total of 205 treatment cycles. All these dispensations were prepared by the pharmacist using aseptic technique, completing the promotor logs and blinding the treatment if necessary. The location of the included subjects right next to the pharmacist's office made it possible to resolve the nursing staff's doubts regarding drug administration. In addition, pharmacotherapeutic support was offered in prescribing premedication and fluidotherapy. Several dose adjustments of concomitant drugs were also performed (the most common was duplicity of analgesics). The experimental treatments used were mAbs that have demonstrated effectiveness and safety in previous trials. The overall cost saving was 591.928,80 euros (the sponsor provided all the investigational products in these trials). The study with the highest cost impact offers a saving of 3.208,65 euros per cycle (nivolumab 480 mg).
Conclusion: Patient enrolment in melanoma clinical trials represents a considerable economic saving and a significant reduction in pharmaceutical costs. The inclusion of the pharmacist in the investigator team brings an additional benefit in terms of patient care.

PP064

BLOODSTREAM INFECTIONS CAUSED BY CARBAPENEMASE-PRODUCING ENTEROBACTERIACEAE: A CHALLENGE FOR APPROPRIATE EMPIRICAL TREATMENT

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Background: Bloodstream infection is a pathological entity associated with a high morbidity and mortality rate and carbapenem resistance of Gram-negative bacteria became a global problem. Early and effective antibiotic treatment is associated with improved outcomes in these patients. In addition, a multidisciplinary approach from the Antimicrobial Stewardship Program (ASP) is needed.
Aim: The aim was to describe the clinical and therapeutic management of bloodstream infections caused by carbapenemase-producing *Enterobacteriaceae* (CPE) and to assess the rate of appropriate empirical treatment and its impact on clinical outcomes. Appropriate treatment was defined as prescribed within 24 h, active in vitro and at the adequate dose and route of administration.
Method: The retrospective cohort study was conducted between January 2016 and June 2023. Patients over 18 years of age with a single carbapenemase-producing *Enterobateriaceae* bacteremia were included. Data were collected from the hospital's electronic record.

Epidemiological and demographic data of the patients, data related to bacteremia and isolated microorganisms were collected. Primary clinical outcomes were: clinical cure, all-cause in-hospital mortality, and re-admission rate and accuracy of empirical antimicrobial treatment.. R® Commander software (version 2.8–0) was used for the statistical analysis.

Results: A total of 46 patients with bacteremia were included.65.2% were men with a median age of 59 years (IQR: 52–73.5) and Charlson index 4 (IQR:2.2–5). The most frequent risk factors for CPE were contact with the health care system (45.6%), followed by previous antibiotic treatment (45.6%) and hospital admission in the last month (30.4%). The most frequently isolated microorganisms were: *Klebsiella*spp. 52.2% and *E.cloacae* 41.3%. OXA-48 (50%) and VIM (39.1%) were the most frequent type of carbapenemase. Urinary (28.2%) and Respiratory (26.1%) tract were the most prevalent sources. According to the severity: 52.1% resulted in sepsis or septic shock. 78.2% of patients received broad-spectrum antibiotic treatment prior to the onset of bacteremia and 21.7% were previously colonized by the same CPE. Regarding clinical outcomes were clinical cure (67.4%), crude in-hospital mortality was 43.5%. Re-admission rate was 26%. 69.5% of the treatment was inappropriate due to inactivity in vitro. The clinical cure was greater in patients with appropriate treatment: 92.9% vs 56.2% ($p = 0.015$). In-hospital mortality was also significantly lower in patients with appropriate treatment: 21.4% vs 53.1% ($p = 0.046$).

Conclusion: Even with the use of broad-spectrum antibiotics in empirical treatment, the rate of prescription of active in vitro for CPE antibiotics was considerable low (slightly more than one third of the study population).Therefore, it is important to take into account the patient's baseline status, previous antibiotic treatment and contacts with the health care system to design the empirical treatment regimen because appropriately prescribed treatment is significantly related to higher cure rates and lower patient mortality.

PP065

MANAGEMENT OF STENOTROPHOMONAS MALTOPHILIA INFECTIONS: SHOULD IT BE TREATED EMPIRICALLY?

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Background: *Stenotrophomonas maltophilia* is a non-fermenting, Gram-negative bacillus that has emerged as an opportunistic nosocomial pathogen. The crude mortality rate of *S.maltophilia* can be increased to 75% in patients with HAP, which is of concern given that some commonly used broad-spectrum antibiotics are not effective against it due to their intrinsic resistance mechanisms.

Aim: The aim of this study was to describe the therapeutic management of patients with bloodstream infection caused by *S.maltophilia.* The study included adult patients ($\geq$ 18 years of age) with bacteremia caused by *Stenotrophomonas maltophilia.*

Method: This retrospective, observational cohort study was conducted in a 1000-bed tertiary-level university hospital in southern Spain between January 2016 and June 2022. Data were gathered from the hospital's electronic record. Epidemiological and demographic data of the patients, data related to bacteremia and isolated microorganisms were collected. Primary clinical outcomes were: clinical cure, all-cause in-hospital mortality, and re-admission rate and accuracy of empirical antimicrobial treatment. R® Commander software (version 2.8–0) was used for the statistical analysis. This study was approved by the local ethics committee.

Results: There was only one episode per patient included of a total of 26 patients. 75.9% were men, median age 61.8 years (IQR: 50.6–75.8). Charlson index 5 (2.5–7.5). Pirr score 2 (0.0–4.0). According to the severity: 31.0% resulted in sepsis or septic shock. The source of bacteremia was respiratory (31.0%) followed by unclear (24.1%). 79.3% of patients had at least one rick factor for infection by multidrug-resistant microorganisms. 62.1% were treated previously with antibiotics, 37.9% were admitted in the hospital in previous 30 days. The median length of hospital stay 42 (18.5–75.0). Appropriate empirical treatment 27.6%. 31.0% were treated with combination therapy. Bacteremia-related mortality was 37.9%. 100.0% of bacteremias were hospital acquired. Levofloxacin and Sulfametoxazole/Trimetoprim were used as the first line treatment in 17.2% and 48.3% respectively, followed by Tigecycline (10.3%). The susceptibility were tested: 72.4% sensitive for Levofloxacin and 93.1% for Sulfametoxazole/Trimetoprim.

Conclusion: Due to all guidelines not recommending empirical coverage of stenotrophomonas, the rate of adequate empirical treatment is very low. Patients who acquire this type of infection are usually critically ill, with many comorbidities, which would also explain the high mortality rate. In the future, the factors that would predict accurately the risk of Stenotrophomonas infection should be further analyzed.

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PP066

CLINICAL PHARMACIST ROLE IN IDENTIFYING PHARMACOTHERAPY PROBLEMS DURING HOSPITAL ADMISSION:OBSERVATIONAL STUDY

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Background: If data of all the drugs used by the patient up to the hospital admission are not recorded, this may lead to the discontinuation of drug therapy or the use of an inappropriate drug during hospital stay. The process of medication reconciliation is an important step in order to reduce the number of unintentional pharmacotherapy discrepancies during admission.

Aim: Prospective, observational study was conducted during three months period in 2023 and observed 65 patients treated in the University Clinical Center of the Republic of Srpska (UKC RS). Aim of the study was to show the role of the clinical pharmacist in identification of pharmacotherapy problems recorded during the admission of the patient to the hospital.

Method: The study included patients treated at the Clinic of General and Abdominal Surgery, the Clinic for Orthopedic surgery and Traumatology and the Clinic for Internal Diseases, the Department of Gastroenterology Hepatology and Toxicology and at the Department of Endocrinology at UKC RS who had at least one drug in their therapy before admission. The recording of data on the drugs used by the patient in therapy before admission to the hospital by the pharmacist was carried out no later than 24 h after admission, and then a comparison was made with the pharmacoanamnesis made by the doctor, as well as the identification of problems in pharmacotherapy.

Results: During admission to the hospital, the pharmacist collected data on all drugs in therapy for 65 patients who were included in the research, and then compared that data with the data recorded by the doctor. A total of 334 medicines were registered by pharmacists, and 189 medicines by doctors. Only one unintentional pharmacotherapeutic discrepancy was identified in 21 (32,31%) patients. Out of a total of 112 unintentional pharmacotherapeutic discrepancies in the pharmacoanamnesis recorded by the doctor, the largest number of problems was the omission of 102 drugs (91,07%), followed by other discrepancies, wrong dosage 5 (4,46%), wrong dosage interval 3 (2,68%) and drug without indication 2 (1,79%).
Conclusion: The participation of the clinical pharmacist in the healthcare team can significantly reduce the number of unintentional discrepancies in pharmacotherapy during hospital admission as well as the associated preventable adverse drug reactions.
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PP067

DRUG-RELATED PROBLEMS IN A TERTIARY MEDICAL INTENSIVE CARE UNIT

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Background: Critically ill patients in the intensive care unit (ICU) are at increased risk of drug-related problems (DRPs) due to the severity of their illness, comorbidities, polypharmacy, and altered pharmacokinetics. The involvement of clinical pharmacists in multidisciplinary ICU teams may help to identify and resolve these DRPs.
Aim: To evaluate DRPs and clinical pharmacist interventions (PIs) in the medical ICU of a tertiary university hospital in Türkiye.
Method: This study was conducted retrospectively between May and October 2023 (6 months) in the medical ICU of a tertiary university hospital. The study included patients admitted to ICU during the study period and had at least one DRP. These patients were monitored daily by clinical pharmacists working five days a week. During the study, clinical pharmacists identified DRPs and made PIs to address them. The final decision regarding the implementation of PIs was made by the attending physicians. DRPs and PIs were indexed according to the classification of the French Society of Clinical Pharmacy (SFPC) using a report form developed and validated by the SFPC.
Results: A total of 389 DRPs were identified in 114 patients, with a mean of 3.4 DRPs per patient and 127.3 DRPs per 1000 patient days in the cohort. The mean age of the patients was 63.9 ± 16.5 years, and 56.1% (n = 64) were male. All DRPs originating from 400 prescribed drugs and the corresponding PIs were documented during daily ward rounds. In total, 97.4% (n = 379) of the PIs were accepted by the attending physicians and implemented into practice. The most commonly identified DRPs were "overdosage" (47.6%), followed by "subtherapeutic dosage" (22.9%), "drug monitoring" (10.0%), "nonconformity to guidelines or contraindication" (7.7%). Most of the PIs were concerned mainly with "dose adjustment" (72.8%), followed by "drug monitoring" (9.8%) and "drug switch" (7.7%). These interventions were mainly related to drugs from the "anti-infectives for systemic use" (75.8%). PIs based on active ingredients were most frequently made about meropenem (n = 78, 19.5%), teicoplanin (n = 39, 9.8%), enoxaparin (n = 27, 6.8%), and colistin (n = 20, 5.0%).
Conclusion: Clinical pharmacists in multidisciplinary ICU teams play an active role in optimizing complex medication regimens by detecting and effectively managing DRPs to improve drug safety and effectiveness.

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PP068

PILOTING EXTENDED SERVICES IN COMMUNITY PHARMACY PRACTICE

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Background: A framework consisting of standard operating procedures (SOPs) for the provision of extended services, including medicine use review, patient review and advice and treatment services, in community pharmacy practice in Malta was proposed.[1] This study addresses piloting of these extended services.
Aim: To assess the feasibility of implementing standardised extended community pharmacy services.
Method: The study was conducted in a community pharmacy selected by convenience sampling. Twelve extended services to be piloted were identified according to infrastructure for service implementation present in the pharmacy. A pharmacist checklist corresponding to the SOP was compiled for each service and reviewed for face and content validity by 4 community pharmacists and 3 general practitioners (GP). Feasibility testing was conducted over 300 h, targeting at least 10 participants for each service by purposive sampling. Time and outcomes of service implementation were assessed.
Results: The infrastructure present comprised a private consultation area, one pharmacy support staff, medical devices/consumables, and documentation forms. The checklists were rated highly (> 4 out of 5) by the validation panel. Eighty-eight participants were recruited; number of participants (n) and time (mean M, range R, in minutes) for services piloted were: Medicine use review (n = 10, M = 14, R = 7–24), patient review (n = 22, M = 21, R = 14–28), including blood pressure (BP) measurement, weight management, and urinalysis, and advice/treatment services (n = 56, M = 17, R = 11–26), including eye, ear, skin conditions, sore throat, urinary tract infections, smoking cessation, routine immunisation, and international travel health. Non-pharmacological advice was provided to all participants, 44 were referred to GP and non-prescription pharmacotherapy was dispensed in 42 participants. Examples of reasons for referral were side-effects, drug interactions, abnormal urinalysis, elevated BP, and *red flag* symptoms.
Conclusion: Availability of the necessary infrastructure and utilisation of practical SOPs and checklists support the feasibility and successful implementation of extended community pharmacy services within a collaborative care context. Implementation of extended services led to pharmacist interventions which were accepted by patients. Study limitations include conducting the study in only one

community pharmacy and patient follow-up to assess the outcome of interventions was not undertaken.

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PP069

ANTIBIOTIC USE IN SURGICAL PROPHYLAXIS PRACTICES AND CLINICAL PHARMACIST CONTRIBUTIONS: AN OBSERVATIONAL STUDY

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Background: Surgical site infections (SSI) occur within the first month after surgery[1]. There are antimicrobial prophylaxis measures with proven effect for SSI. The aim of this study was to examine the use of antibiotics in current prophylaxis practices and to evaluate the role of the clinical pharmacist (CP).
Aim: The aim of this study is evaluation of the antibiotic prophylaxis practices in surgical units of a university hospital and investigating clinical pharmacist possible role.
Method: An observational study was conducted at the surgery units of a 1000-bed university hospital in Istanbul. The prescription registries of 108 patients with an indication of surgical antimicrobial prophylaxis (SAP) were reviewed. Demographics, antimicrobial use and time frame, wound classification, American Society of Anesthesiologists (ASA) score, and comorbidities were recorded. The SAP practices were evaluated according to the Cerrahpaşa Medical Faculty Surgical Antimicrobial Prophylaxis Guideline.
Results: Prescriptions from 5 units were included. The mean age was 45 ± 20.17 and 67(62.04%) of them were men. There are 32(29.62%) patients with an ASA score of 4. The majority of the patients had "clean" or "clean—contaminated" wounds 69(63.8%), and 4(3.7%) were "contaminated". The rate of SAP within the half hour before the surgery and during anesthesia was 72.2%, and 9.25% patients [with clean/clean contaminated surgery?)] did not receive SAP. The highest rate of compliance with the SAP guideline was observed in Neurosurgery (100%) followed by thoracic surgery (83.3%), general surgery (74.3%) and plastic surgery (72.7%). The most frequently preferred agent for SAP was Cefazolin (63%). In 16(14.81%) patients SAP was discontinued within 24 h after surgery, contrary SAP exceeded 24 h in 14(12.96%) patients.
Conclusion: Although the prophylaxis protocol in patients undergoing surgical operations is similar, the variability of patient characteristics such as age, gender, existing comorbidities, and ASA risk score reveals the importance of CP in order to make personalized prescriptions. Although the details regarding SAP are specified in the guidelines, the CP's duty is to report possible interactions, adverse events and specific dosing situations to the physician, by getting involved in the patient follow-up and monitoring.

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PP070

ASSESSMENT OF PHARMACEUTICAL INTERVIEW FOR SAFE USE OF TEMOZOLOMIDE AND LOMUSTINE AMONG GLIOBLASTOMA PATIENTS

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Background: Glioblastoma, a brain tumor, is frequently treated with oral chemotherapies Temozolomide (TMZ) or Lomustine (CCNU). Lack of knowledge of these drugs often enhances medication errors among patients, including wrong dose or duration of treatment.
Aim: To assess the benefit of Pharmaceutical Interview (PI) in order to secure patient administration.
Method: We conducted either an initiation or follow-up structured interview for glioblastoma outpatients who received TMZ or CCNU between November 2nd 2023 to April 30th 2024. Initiation questionnaire assesses patient knowledge before dispensing the treatment with an information brochure, while follow-up questionnaire one month later is aiming to compare acquired knowledge regarding administration method, dosage, adverse events, forgetfulness and vomiting management.
Results: Over this six-month period dispensing time, 110 patients and/or their caregivers were interviewed: TMZ initiation [16], follow-up [75]; CCNU initiation [8], CCNU follow-up [40] or TMZ/CCNU combination therapy initiation [3]. PI average duration is 18 min [min: 10; max: 40]. 84% of PI were carried out with a caregiver, in which 13% of patients were absent. At initiation, administration method (85%), dose (92%), duration (73%), hygiene rules like washing clothes at a high temperature after vomiting (100%) and hand washing after drug intake (67%) remain unclear after the medical consultation, so they need to be fully reviewed during the first PI. During the follow-up PI, the previous themes are already assimilated, except when the dosage changes leaving the patient confused about the number of capsules to take (55%). Reinforcement is required concerning adverse events (76%) and drug monitoring (45%). Further areas can be covered including vaccination, travelling, contraception and pregnancy, treatment tolerance.
Conclusion: To ensure safe use of these high-alert medications, patient and their caregiver knowledge need to be evaluated when starting the treatment and one month after. This study highlights the role of the pharmacist in this context. To go further, we aim to interview patients and/or caregivers after 4 months of treatment duration to assess maintenance of knowledge and long-term adherence.
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PP071

CHARACTERIZATION OF ADVERSE DRUG REACTIONS ASSOCIATED WITH THE USE OF PSYCHOTROPIC MEDICATIONS

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Background: Adverse Drug Reaction (ADR) reports using spontaneous reporting systems are known to assist in the identification of new, rare, and serious ADRs in clinical practice. Research characterising ADRs in patients taking psychotropic medications in Qatar is scarce.
Aim: This study aims at exploring the characteristics related to psychotropic medications' related ADRs' in addition to risk factors, severity, causality, and preventability.
Method: This is a retrospective chart review of patients receiving care at Hamad Medical Corporation's (HMC) Mental Health Services. ADR reports resulting from the use of psychotropic medications submitted to the Spontaneous Reporting System database between 2018–2022 were analysed. Hartwig's Severity Assessment Scale, Naranjo Algorithm and Schumock and Thornton Criteria were used for Severity, Causality, and preventability assessment, respectively. Some patient demographics and comorbidities were also collected and then described quantitatively.
Results: A total of 908 reports were analysed. Most ADRs were reported for males (543, 59.83%), in 2020 (256, 28.2%). More than half of the ADRs (67.7%) were moderate in severity, with 64.5% of the patients recovering or have been already recovered at the time of the report. About 65.6% of the reported ADRs were found to be not preventable. The causality of the ADR shows that around half (56.8%) of the ADRs were classified as probable and around 3.9% were classified as definite. Extrapyramidal symptoms were the highest reported ADRs (46.5%) followed by gastrointestinal side effects (13.3%) and hyperprolactinemia (13.2%) and the cardiac side effects were reported in 34 (3.7%) cases. Of the offending agents, haloperidol (17.2%), Olanzapine (13%), Risperidone (12.6%) and Clozapine (9.6%) were the most common. Nearly all the reports (790, 87%) were reported by pharmacists.
Conclusion: While the recovery rate from ADRs to psychotropics appears relatively high, the significant proportion of non-preventable ADRs underscores the need for a multifaceted approach to improving the safety and effectiveness of psychotropics medications. This includes advancements in regulatory policies, the integration of holistic treatment strategies and personalized medicine.

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PP072

THE EVALUATION OF OLDER PATIENTS' SELF MEDICATION MANAGEMENT SKILLS AT COMMUNITY PHARMACY: PRELIMINARY FINDINGS

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Background: Older patients have many problems in self-management of their medications especially if they have polypharmacy and higher medication regimen complexity.
Aim: To evaluate the self-medication management skills of older patients in community pharmacies.
Method: In this descriptive study, older patients who used at least one chronic medication were included in community pharmacies. The Turkish version of Drug Regimen Unassisted Grading Scale (DRUGS-TR), which consisted of four domains (medication identification, access, dosage, and timing) was used to assess self-management of their medications after conducting translation, cultural adaption, expert panel and pilot study (1).
Results: Among 31 older patients, 54.8% of them was female and the median age [IQR] of them was 69.0 [66.0–76.0]. The median [IQR] number of chronic diseases was 3.0 [1.0–5.0] and the polypharmacy rate was 48.4%. The median [IQR] total score of the DRUGS-TR was 13.0 [8.0–24.0] and the median [IQR] summary score of the DRUGS-TR was 83.3 [68.8–91.7]. The total median [IQR] score of medication identification was 3.0 [1.0–7.0]. The total median [IQR] score of medication access was 4.0 [2.0–7.0]. The total median [IQR] score of medication dosage was 3.0 [2.0–5.0]. The total median [IQR] score of medication timing was 2.0 [1.0–6.0].
Conclusion: The DRUGS-TR can be used to identify and solve self-medication management problems in older patients.

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PP073

A CROSS-SECTIONAL STUDY OF COMMUNITY PHARMACISTS' AWARENESS AND KNOWLEDGE REGARDING DOWN SYNDROME MANAGEMENT

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Background: Down syndrome (DS) is the most common genomic disorder causing intellectual disabilities and is associated with characteristic dysmorphic features as well as many related health problems [1]. The need for pharmacists to be more effective in the general management of patients with DS cannot be dismissed given the rising and excessive medication usage.

Aim: To assess the awareness and knowledge of DS pharmacotherapy, along with an assessment of the provision of patient education about DS management by community pharmacists in Istanbul, Türkiye.
Method: This was a descriptive, cross-sectional study conducted among community pharmacists in Istanbul, Türkiye using a structured, validated questionnaire to assess the awareness and knowledge of treatment and patient education among DS patients and their caregivers among community pharmacists. Data analysis was carried out using Microsoft Office Excel 2013 and the Statistical Package for the Social Sciences (SPSS) software for Windows version 23.0. Number data, whereas the mean, standard deviation, and median range were used to express numerical variables.
Results: A total of 105 community pharmacists were included, with the majority of female participants (51.4%). 81% of community pharmacists have never had training about DS. The mean knowledge score regarding DS management was 6.26 ± 2.0. However, 28.6% of the participants were aware of the medicines used in DS., 25.7% had knowledge regarding drugs' adverse effects, 23.8% about drug interactions, and 26.7% reported provision of patient education to the patients, family members or caregivers when supplying the medicines used in DS.
Conclusion: Turkish community pharmacists reported an acceptable level of DS general disease management. However, they need to improve their involvement regarding patient education while supplying the medicines used in DS management.

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PP074

ROLE OF THE PHARMACIST IN THE MANAGEMENT OF NAUSEA—VOMITING DURING PREGNANCY: A PROSPECTIVE OBSERVATIONAL STUDY

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Background: Nausea and vomiting during pregnancy (NVP) impacts about 70% of pregnant women [1]. Since the pregnant women need to use medicine or supplement to cope with nausea and vomiting (NV), it is necessary to determine the severity of pregnancy-related NV, evaluate the results of the treatment applied, and provide patient counseling in order to guide patients correctly.
Aim: This research was aimed to determine the severity of pregnancy-related nausea and vomiting in pregnant woemen, to evaluate the effectiveness of treatments used on the severity of pregnancy-related NV, to detect the health problems experienced during pregnancy and medicines used and to identify the issues that pharmacist consultancy is needed.
Method: A pilot prospective observational study was carried out between 6 November 2023–4 March 2024 at the gynecology and obstetrics department of a private hospital. Pregnant women who complaints from pregnancy-related NV and admitted to join to the research were included. The Pregnancy-Specific Nausea and Vomiting Severity Scale (PUQE-24) and additional questions were applied via face to face. Sociodemographic data of participants, other health problems they experienced during pregnancy, medicines they used and PUQE-24 were assessed. Descriptive statistical analyzes and paired t-test were performed using the SPSS 22.0 program to analyze the data.
Results: 21 participants with a mean age of 32.5 ± 1.22 were participated. 16 (76%) participants got bachelor degree and 15 (71%) of all were working. 16 (76%) of the participants were experiencing pregnancy for the first time. 4 (80%) of the remaining had experienced NV during their previous pregnancies. 16 (76%) of all had lived health problems during pregnancy. Hyperemesis gravidarum (29%), iron deficiency (29%), vitamin D deficiency (14%) were the most commonly seen other health problems. The mean PUQE-24 score of the participants was 5.90 ± 2.54 at the baseline, after 1st intervention it was changed as 3.90 ± 2.13. Because of 7 (33%) of the participants' symptoms not solved completely, they needed 2nd intervention. Before 2nd intervention their mean PUQE-24 score was 5.71 ± 1.85 and after 2nd intervention it was changed as 3 ± 1.16. There was a statistically significant decrease in the mean score of the participants after each intervention ($p < 0.05$). Ginger was the most commonly prescribed (71%) product which was followed by the doxylamine + pyridoxine (29%).
Conclusion: It was shown that even though the severity of NVP is mild, the pregnant women require to use supplement/medicine to cope with it. Considering this demand and the fact that herbal products are commonly prescribed, pharmacist consultancy is of great importance in terms of guiding the patient correctly and protecting them from misuse. In addition, pharmacists' counselling regarding vitamin-mineral deficiencies that are common during pregnancy, and to direct the patient to a physician in case of requirement is important.

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PP075

THE ASSESSMENT OF NEPHROTOXIC POTENTIAL OF DRUGS CONCOMITANTLY USED WITH RENOPROTECTIVE AGENTS IN NEPHROLOGY OUTPATIENT CLINIC

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Background: Sodium-glucose co-transporter 2 (SGLT2) inhibitors are commonly used in nephrology clinics for their renoprotective effects in patients with diabetes and chronic kidney disease (CKD). However, the risk of nephrotoxicity associated with drugs has not been investigated among patients followed in the nephrology unit.
Aim: The aim of this study was to assess the potential nephrotoxicity risk of concurrently used drugs in patients on SGLT2 inhibitor treatment.
Method: This prospective observational study was conducted in a tertiary care university hospital nephrology outpatient clinic between September 2022-February 2023. Patients who are 18 years and newly prescribed an SGLT2 inhibitor were included. The patients' other

drugs were evaluated for potential nephrotoxicity using the nephrotoxicity risk[score ranges: 0 (no risk) to 3 (certain risk)].
Results: A total of 72 patients (50% female) were included and used 127 drugs (except SGLT2 inhibitors). Patients were on dapagliflozin (n = 26), empagliflozin (n = 24) and empagliflozin + metformin (n = 22) treatment. Among all patients, only 4 did not use any nephrotoxic drugs, while 94.4% had used at least one nephrotoxic drug (1.76 nephrotoxic drug/patient). The nephrotoxic potential of 127 drugs revealed that 98.4% were categorized as 'very low (score: 0.5) to moderate (score: 1.5 points)' risk, while 1.6% as 'moderate-high (score: 2.5)' risk. The mean (± SD) potential nephrotoxicity risk score was 1.69 (± 0.93) in dapagliflozin, 1.46 (± 0.88) in empagliflozin, and 1.59 (± 1.02) in empagliflozin + metformin treatments. The most frequently prescribed drugs with nephrotoxic potential were; angiotensin converting enzyme inhibitors (ACEIs)/angiotensin-II receptor blockers (ARBs) (44.09%), metformin (17.32%), allopurinol (11.02%), proton pump inhibitors (10.24%) and furosemide (%6.3).
Conclusion: Despite the theoretical potential nephrotoxic risk of drugs, such as ACE inhibitors, ARBs, furosemide, and colchicine, their benefits in the management of hypertension and other cardiovascular diseases are well-established in patients with CKD. However, nephrologists should be more vigilant when prescribing these drugs concomitantly, as they may mask the effects of renoprotective agents, such as SGLT2 inhibitors.

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PP076

USE OF REFLECTIVE AUDIONOTES AFTER CLINICAL PHARMACY PLACEMENTS

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Background: Written reflection notes are an often-used method for assessing the learning outcomes from placements. Generally, it promotes critical thinking, problem-solving, and self-directed learning. Reflection facilitates students'.
processing of experiences from placements.
Aim: To evaluate the introduction of reflective audio notes (RAN) after clinical placements. The sample consisted of pharmacy students in a clinical pharmacy course at the University of Bergen. Qualitative data were collected, including observation, focus group interviews, and pre-/post-questionnaires.
Method: The RAN study was designed, implemented, and evaluated as part of the FREMFARM project among 7th semester pharmacy students in the clinical pharmacy course at University of Bergen. Thematic analysis of the collected data was performed using NVivo12. The pharmacy students were on placements in hospital wards and care homes, both independently and in interprofessional groups as part of the clinical pharmacy course. Qualitative data were collected for two consecutive years, with N = 19 and N = 17, respectively. The activity was evaluated and changes applied, based on student and teacher feedback.
Results: 86% of the students prefer to use RAN, in comparison to a written reflective note. Additionally, students reported that their comprehension of how their personal thoughts and feelings are influencing their interactions with others were improved after applying the RAN. Teachers reported that the RAN captures students' emotions and that the reflection appeared to be more impulsive and thus honest, which was an added value to understand and assess the students' learning better. Similarly, the students reported that receiving short and concise audio feedback was practical and useful. On the other hand, 10% of the students found the RAN more time-consuming than written reflection notes, and some students reported that the activity took more effort, as they first wrote down what they wanted to say, before recording the RAN. Some teachers were uncomfortable with the audio format and found it more time-consuming to give feedback to oral recordings, compared to in writing, for the same reasons.
Conclusion: We conclude that integrating an audio component into the reflective assignments offers a unique opportunity for students to bridge the theory to the complexities of clinical pharmaceutical practice. In addition, the RAN assisted students, as a self-assessment tool for critically evaluating their own knowledge, performance, and beliefs.
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PP077

DETERMINATION OF KNOWLEDGE LEVELS OF PHARMACISTS AND PHARMACY SENIOR STUDENTS ON FOOD-DRUG INTERACTIONS

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Background: Food-drug interactions (FDIs) are defined as alterations in drugs' pharmacokinetics or pharmacodynamics as a result of food or changes to nutrients caused by drugs. The pharmacists consult patients on common FDIs. Educating pharmacists about FDIs may improve patient care.
Aim: The aim was to determine FDI knowledge levels among individuals working in various fields of pharmacy, determining the relationship between various factors and FDI knowledge levels, and revealing the effect of training on FDI knowledge levels.
Method: We provided the participants with a validated scale electronically once they gave their consent to participate. Data was collected from the individuals using the scale. We conducted a statistical analysis to assess the knowledge of pharmacists from various disciplines about FDI. Furthermore, senior pharmacy students received education on FDI following the delivery of the scale. Following the training, they were re-administered the scale. We compared the knowledge levels before and after the training. A p-value of 0.05 was considered statistically significant.
Results: In total, 186 participants completed the survey, 32.26% of whom are male. The participants' mean score was 11.47 ± 4.49. According to the scores, 11.83%, 31.72%, 36.02%, and 20.43% of the participants had low, intermediate, good, and very good knowledge levels, respectively. The age ($r = 0.447$) and experience years ($r = 0.543$) showed positive correlation with the score ($p < 0.001$). The senior pharmacy students had a median [IQR] score of 9 [6–11] before the training. After the training, the score increased to 17 [15–18] ($p < 0.001$). The mean scores were different between clinical pharmacy residents (16.31 ± 3.23), clinical pharmacists (17.29 ± 2.20), undergraduates (8.90 ± 3.66), who have bachelor's degree in pharmacy (12.35 ± 2.87), postgraduates (13.71 ± 3.45), and who have a master of science or doctorate degree in pharmacy

(12.45 ± 6.15) ($p < 0.001$). The mean scores were different between those who reported the frequency of consulting to themselves as never, rarely, sometimes, and frequently ($p < 0.001$).
Conclusion: The detection and management of drug-drug interactions can be done through various drug interaction databases. While it is easy to identify patients' medications through various databases, it is very difficult to identify the nutrients they take. Pharmacists can warn patients about the interactions of certain drug groups with certain nutrients through their communication with patients. Therefore, it is very important for pharmacists to receive training on FDI.

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PP078

ANALYSIS OF QUALITY OF LIFE AND ASTHMA CONTROL IN PATIENTS PARTICIPATING IN "ASTHMA UNDER CONTROL'' PROGRAM IN GENERAL PRACTICE

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Background: Quality of life (QOL) analysis in asthma patients plays important role in the context of the disease itself and in maintaining balance in patient's life. Some patients need more information about the disease, as well as improvement in compliance, which impacts on asthma control and their QOL.
Aim: The aim of the study was to analyze QOL and various asthma management aspects to identify patient care areas for pharmacist interventions in general practice. The study evaluated various areas including QOL, severity of disease symptoms, degree of asthma control and inhaler technique.
Method: 23 patients were included into the program. All appointments took place in general practice between March and May 2024 after obtaining written consent from the patients. Inclusion criteria were age over 18, diagnosed asthma, and ability to complete questionnaires. During the consultation data collection, ACT, mini-AQLQ and ARMS questionnaires were used. Patient medical information available at the practice was analyzed prior to consultation. Pharmacist interventions included advice on improvement in asthma control, correct use of inhalers, and asthma exacerbation management.
Results: Over 90% of patients demonstrated adequate knowledge about asthma. More than 80% of respondents presented good adherence to treatment recommendations. The main symptoms of asthma reported by patients were cough (70%), shortness of breath (61%) and wheezing (74%). On average, 39% of patients experienced changes in emotional functioning. Over 60% of patients noticed the influence of environmental factors on the level of asthma control. 70% of the respondents had scores in the range of 20–24 points on the ACT questionnaire. None of patients achieved full control of asthma. The QOL of the assessed patients was influenced by presence of asthma symptoms, exacerbated by environmental factors, that caused limitation of their social activity. In terms of limiting activity, 53% of respondents did not have to give up social activities. Moreover, patients with incorrect inhaler technique achieved worse results in QOL assessment questionnaires than those who used inhalers in accordance with the manufacturer's specification.
Conclusion: Many patient care areas related to asthma management have been identified during the program**.** It is advisable for various pharmacists' interventions to be undertaken in general practice in order to address identified patient needs. Pharmacist interventions and pharmaceutical care can provide education and support for asthma patients, increase their health awareness, level of control of asthma and improve their QOL.

PP079

EVALUATION OF CLINICAL PHARMACY TEACHING ON THE BASIS OF STUDENTS OPINIONS EXPRESSED IN A QUESTIONNAIRE SURVEY

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Background: The teaching of pharmacy at the Medical University started 6 years ago (the University is 75 years old). For the first time in the academic year 2023/2024 students were taught Clinical Pharmacy. The course consists of 45 h. The practical sessions (15 h) took place in hospital wards (oncology ward, intensive care unit, biological drug clinic).
Aim: The aim of this study is to evaluate the teaching of Clinical Pharmacy, as expressed by fifth-year pharmacy students after completion of all courses. All students of the same academic year (n = 28) filled in the questionnaire, describing their remarks on the form of teaching. The results of the survey will help to improve the teaching of Clinical Pharmacy.
Method: The survey was conducted in May 2024 on a group of pharmacy students (n = 28; 100%). These are all fifth-year students taking classes in the subject of Clinical Pharmacy. The survey was descriptive and completely anonymous. Students were asked to evaluate the implementation of the Clinical Pharmacy course and to respond to the following questions: form of organisation, number of hours, range of topics. Only completed questionnaires (n = 27; 96,4%) were used to evaluate the results. No statistical method was used to analyse the results (descriptive survey). The students' opinions were analysed. The opinions were divided into positive and negative.
Results: Distributed questionnaires (n = 28, 100%), completed questionnaires (n = 27; 96,4%), non-completed questionnaire (n = 1; 3,6%). Positive feedback (n = 26; 92,8%): students appreciated the possibility of contact with the patient, discussion of clinical cases of patients, easier assimilation of knowledge, contact with doctors and nurses and familiarisation with the functioning of the hospital, preparation of medicines in the ward, there they criticized too little emphasis on the role of the clinical pharmacist. Students suggested increasing the number of teaching hours on the wards, teaching on other wards (including paediatrics), starting from the 3rd year of study with real patients, teaching patient interviewing and diagnosis, discussing pharmacotherapy with the doctor. Negative feedback (n = 1; 3,6%): the student described being on the wards as uncomfortable, stressed when talking to patients, and pointed out the lack of psychological preparation for talking to oncology patients. He suggested that ward activities should be reserved for willing students.

Conclusion: Pharmacy students are positive about the teaching of Clinical Pharmacy classes, especially those held in the hospital. The number of teaching hours in the hospital should be increased and teaching should also take place in other departments. More involvement of doctors in teaching pharmacy students will allow clinical cases to be discussed and students to learn more easily. There is a need for clinical pharmacists on the wards who, in addition to their daily work, could teach pharmacy students in their specialty. Such surveys should be carried out every year.

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PP080

IDENTIFYING THE IMPACT OF A PHARMACIST INTERVENTION USING INFOGRAPHICS IN EDUCATING PATIENTS ON BIOSIMILARS

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Background: The lower costs of biosimilars, compared to originator biological medicinal products, makes these biopharmaceuticals a promising avenue for increased cost-effective healthcare systems and patient accessibility. Knowledge gaps still exist within patients, hindering the acceptance and uptake of biosimilars.
Aim: The aims were i) to develop a questionnaire and infographics to assess patients' knowledge and concerns on biosimilars and clarify information needs, and ii) to assess how a pharmacist intervention affects confidence on biosimilar use.
Method: A questionnaire and infographics were developed in Maltese and English and validated through a panel (2 doctors, 2 pharmacists, 2 patients). Three infographics i) explained what generics are, ii) provided an overview on biological medicinal products and biosimilars, iii) explained regulatory criteria for biosimilars to obtain market authorisation. The questionnaire to determine knowledge and concerns was disseminated to 70 patients on biosimilars from 10 community pharmacies around Malta, geographically selected to include the north, centre, and south regions. All patients were subjected to an educational pharmacist intervention, using infographics.
Results: Fifty-three out of 70 patients lacked biosimilar awareness, and 9 believed biosimilars were as good as the originator. Pre-intervention, 22 patients were apprehensive that they were receiving a biosimilar. Post-intervention 7 patients remained apprehensive. Statistical significance ($p = 0.008$) was observed when apprehension pre-intervention was correlated with patient confidence post-intervention. Thirty-eight patients had no concerns post-intervention. A common concern was the potential occurrence of side-effects (n = 19). Forty-two patients out of 70 expressed the need for further education on possible biosimilar side-effects. Fifty-nine patients found the infographic information to be a novel educational medium. Out of the 70 interviewed patients, the number of patients that strongly agreed or agreed that i) there is not enough biosimilar education was 63, ii) the pharmacist intervention helped improve their understanding of biosimilars was 66, and iii) a pharmacist intervention prior to initiating a biosimilar would have been beneficial was 49.
Conclusion: The development of validated and easily understood educational material in the form of infographics proved beneficial in closing knowledge gaps and improving patient confidence and acceptance of biosimilars. Educational initiatives targeting patients are a way forward to facilitate biosimilar uptake and to enable the pharmacist contribution to evolve the concept whereby the patient moves from a compliant mode to adherence and further more to concordance.
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PP081

EVALUATION OF PHARMACY STUDENTS' KNOWLEDGE OF HUMAN PAPILLOMA VIRUS: A CROSS-SECTIONAL STUDY

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Background: Pharmacists play a crucial role on educating the public about sexually transmitted diseases, and human papilloma virus (HPV) is one of the most transmitted in the world. Pharmacy students are future pharmacists therefore their knowledge is also important. To our knowledge there is no study in literature assessing only pharmacy students' knowledge in Türkiye.
Aim: The aim of this study was to evaluate the pharmacy students' knowledge on HPV, their willingness to receive education about HPV and to assess the deficiencies of knowledge on HPV.
Method: This study was a descriptive study including all grade pharmacy students in a private university, excluding English prep class students. Participants' demographic data and other relevant information were collected and Human Papilloma Virus—Knowledge Scale (HPV-KS), previously validated to Turkish by Demir Bozkurt and Özdemir was employed for evaluation of knowledge [1]. Pharmacy students were randomly selected and questionnaires were applied to the participants face to face between May 6th, 2024, and May 10th, 2024. Analyses such as mean value, standard deviation and t-test were performed using SPSS 23.0 program.
Results: A total of 79 students were participated in the study with 70.9% (n = 56) being female. Participants mean age was 21.8 ± 1.8 and the mean score was 18.4 ± 5.1. Highest score obtained from the questionnaire was 28 and lowest was 0, out of 33. Female participants had the mean score of 19.7 ± 4.4, in contrast to male participants 15.4 ± 5.5 ($p < 0.01$). Only 16.5% (n = 13) of the participants received prior education. The participant who received prior education had the mean score of 21.2 ± 3.2, where others had 17.9 ± 5.2 ($p < 0.01$). On the contrary, 87.3% (n = 69) of the participants were willing to receive education on HPV. The most preferred way to receive such education was via video by 37.2% (n = 27).
Conclusion: Although female participants and those with prior education scored significantly higher, there are some certain aspects that are unknown or misunderstood. Nevertheless, most of them are willing to receive education and improve their knowledge. An education may enable pharmacy students to provide education more effectively and improve their future contribution to public health. For this reason, it is important to include HPV infection, methods of

protection and vaccination in the clinical pharmacy courses that students take during undergraduate education.

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PP082

ENHANCING PHARMACY STUDENTS' INVOLVEMENT IN INPATIENT PHARMACEUTICAL CARE THROUGH PROBLEM-BASED LEARNING

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Background: Problem-Based Learning (PBL) is a flipped teaching approach that promotes active learning and inquiry-based thinking. It involves learners independently searching for information, organizing it, and collaboratively solving clinical problems through group discussions.
Aim: To enhance pharmacy students' involvement in providing pharmaceutical care for inpatients, clinical instructors modify authentic cases into teaching materials and integrate PBL into their training program.
Method: After traditional courses on "medication assessment" and "pharmaceutical care documentation," students engaged in two four-hour PBL sessions. Effectiveness was evaluated using pre- and post-tests with 10 relevant multiple-choice questions. Besides, students completed self- and peer evaluations, rating "information provision," "communication and expression," "thinking process," and "attitude" on a scale from 1 to 5. A satisfaction questionnaire assessed "class schedule and location arrangement," "peer discussions," "case suitability," and "instructor guidance strategies" was also administered.
Results: The study revealed a significant improvement in 12 students' performance from the pre-test to the post-test, with average scores of 51.3 ± 18.5 and 79.7 ± 14.3, respectively ($p = 0.03$). The average self-assessment scores for "information provision," " thinking process," "communication and expression," and "attitude" were 4.2 ± 0.4, 3.8 ± 0.5, 4 ± 0.6, and 4.3 ± 0.5, respectively. Similarly, the peer-assessment scores were 4 ± 0.6, 4 ± 0.4, 4 ± 0.6, and 4.3 ± 0.6, respectively. Notably, 58.3% and 66.8% of students achieved excellent or good ratings across all four dimensions of self and peer evaluation. Regarding the satisfaction questionnaire, the average scores for "class schedule and location arrangement," "peer discussions," "case suitability," and "instructor guidance strategies" were 4.8 ± 0.5, 3.9 ± 0.5, 4.4 ± 0.5, and 4.3 ± 0.5, respectively, with 83.3% of students expressing high satisfaction levels.
Conclusion: The PBL course demonstrated positive outcomes and satisfaction among pharmacy students undergoing inpatient pharmaceutical care training. Peer interaction, opinion sharing, and instructor guidance enhanced student engagement and motivation. Nonetheless, further assessment is warranted to evaluate students' ability to provide quality pharmaceutical care in actual clinical settings, considering factors such as service volume and physician responsiveness.

PP083

PHARMACY STUDENT AND PHARMACISTS' KNOWLEDGE LEVELS AND ATTITUDES ABOUT ANTIMICROBIAL STEWARDSHIP PROGRAMS

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Background: Antimicrobial Stewardship Programs (ASP) aim to optimize clinical outcomes by ensuring that the most appropriate antimicrobials are selected and used in the treatment of patients. It is important that pharmacists providing primary healthcare services have sufficient knowledge on this subject.
Aim: In our study, we aimed to conduct a qualitative study on the evaluation of ASP-related courses.
Method: A self-developed questionnaire was administered to pharmacy students and pharmacists(graduated within last 5 year). The questionnaire was reviewed for face and content validity, pilot tested and then administered to a sample in Istanbul. Participants were categorized as according to year of education(G1:1–3, G2:4, 5 G3:Graduates). The level of attitudes and knowledge was evaluated using a cut off value of 80%. Google forms were used, and reliability was assessed using Cronbach's α and statistical significance was set at $p < 0.05$.
Results: Total of 185 pharmacy student and pharmacist participated and, 147(79.45%) were female. Majority of the participants were student (G1: 53, 28.64%, G2: 69, 37.29% and 63, 34.05%). Cronbach's alpha and mean (SD) values of the questionnaire were calculated as 0.908 and 3.84 ± 0.59, respectively. The mean knowledge and attitude scores for groups G1, G2 and G3 were 71.2 ± 13.68, 79.09 ± 12.88, 80.84 ± 11.53 and, 72.8 ± 12.64, 76.80 ± 12.75, 78.62 ± 13.06, respectively. A significant difference was observed among the three groups regarding knowledge level and attitude ($p < 0.001$). Post-hoc tests revealed a significant difference in knowledge level between G1-G2 and, G1-G3, whereas no statistically significant difference was found between G2-G3 ($p < 0.05$). Similarly, for the attitude levels, a significant difference was detected between G1-G2, G1-G3, while no statistically significant difference was observed for G2-G3 ($p < 0.05$). In our study, the concordance level between the level of knowledge and attitude was 0.644 (95% CI:0.551-0.0721).
Conclusion: A significant part of the sample does not have sufficient knowledge about ASP. The calculated rate was found to be significantly low for healthcare professionals. According to the literature, an increase in the level of knowledge about ASP is linked with better attitudes. This could be due to the insufficient integration of ASP into undergraduate education.

PP084

PARENTS' KNOWLEDGE AND VACCINATION BEHAVIOUR REGARDING UPPER RESPIRATORY TRACT INFECTIONS: OBSERVATIONAL STUDY

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Background: Upper Respiratory Tract Infections (URTI) encountered in childhood constitutes 75% of the diseases seen in children. Pharmacists contribute greatly to the identification, correction, and prevention of medication problems in reducing patient length of stay.
Aim: This study aims to investigate parents' perceptions, knowledge levels (KL), and attitudes about URTI among Turkish population.
Method: An observational self-developed questionnaire conducted on parents. The questionnaire was reviewed for face and content validity, pilot tested and then administered to a sample of parents in Turkey. Google forms was used and reliability assessed with Cronbach's α, and statistical significance set as $p < 0.05$.
Results: Total of 143 parent were included, 88.1% mothers. Majority of the participant have 2 or less children (89.6%). 72.1% of the parents who took their children to hospital for the common cold within the last 6 months and 21% were admitted to hospital at least 5 times. Cronbach's α value of the questionnaire was 0.891. The mean KL about URTI was 59 ± 14.4%. Only 52(36.36%) parents had sufficient KL about URTI (> 70%). KL of mothers was superior to fathers (p = 0.047), and others (grandmother, aunts etc.) (p = 0.455). The rate of parents who vaccinated their children with the mandatory vaccines was 99%, while who did not vaccinate their children with flu vaccine was 93%. An 82% of the parents stated that flu vaccine should not be taken annually while 44.75% of them had safety concerns with flu vaccines.
Conclusion: A significant portion of parents lacked adequate knowledge about URTIs. Despite the high adherence with compulsory vaccinations, there was a prevailing tendency of disengagement from flu vaccines. This could be related to reimbursement, prevailing attitudes, and entrenched habits for flu vaccination.

PP085

INTERDISCIPLINARY COLLABORATION AND EDUCATION ATTITUDES IN MEDICAL AND PHARMACY STUDENTS: CLINICAL SKILLS EVENT

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Background: The Clinical Skills Event (CSE) [1] is a Slovak national competition for pharmacy and medical students in Slovakia. Competition promotes interdisciplinary collaboration, education, clinical knowledge and skills. Students compete in teams consisting of two pharmacy and two medical students, whose tasks are to solve clinical case problems.
Aim: Aims of our study were: 1) to assess students' attitudes towards their competencies related to collaborative practice in team-based healthcare; 2) to assess their attitudes towards interprofessional education and collaborative learning 3) to explore their experience with interprofessional learning in medical and pharmacy school curriculum.
Method: Before and after the competition, students received an internally validated questionnaire translated from English to Slovak language, using a 5-point Likert scale, focusing on three areas: Sect. 1—Assessment of skills and knowledge related to interdisciplinary team collaboration [2]; Sect. 2—Assessment of attitudes towards interdisciplinary education [3]; Sect. 3—Survey of the implementation of interdisciplinary education in study curricula [4]. Students were also asked an open-ended question regarding their motivation for participating in the competition. The Mann–Whitney U test was used for statistical evaluation.
Results: The pre-competition questionnaire was completed by 87 participants (100%), and the post-competition questionnaire by 81 participants (93.1%). Out of all participants, 43 (49%) were medical students and 44 (51%) were pharmacy students. Questions in Sect. 1 were compared before and after the competition. There was an overall increase in the average score regarding positive attitude among students towards their ability to work in interdisciplinary teams after the competition (4.21 vs. 4.43; $p = 0.018$). Pharmacy students rated interdisciplinary education and its implementation more positively than medical students (Sect. 2: 4.73 pharmacy vs. 4.55 medical, $p = 0.0004$; Sect. 3: 4.19 pharmacy vs. 3.87 medical, $p < 0.0001$). The main motivation to participate at the competition were to gain new experiences and learn something new (n = 48) and to try out interdisciplinary collaboration and meet new people (n = 41).
Conclusion: Both medical and pharmacy students consider the concept of interdisciplinary collaboration and education beneficial. Their self-assessed ability to work in interdisciplinary teams improved through participation in the Clinical Skills Event competition. The event will be further developed into international competition.

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PP086

A CROSS-SECTIONAL ANALYSIS OF CLINICAL PHARMACIST IMPACT ON PREDIABETES MANAGEMENT

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Background: Prediabetes (PD) is a growing chronic condition. Pharmacists can improve outcomes and help prevent its progression to Type 2 diabetes through effective patient education, which increases awareness of symptom control. Optimizing treatment requires extensive education and motivation.

Aim: This study aims to evaluate the impact of clinical pharmacists on PD management by assessing perceptions, knowledge, and the role of pharmacists in optimizing outcomes.
Method: This study was designed to assess pharmacist intervention effects on PD patients, involving medication review and patient education. he outcomes were assessed after 90 days by measuring fasting plasma glucose, glycolased hemoglobin, HOMA-IR levels, lipid profile, body mass index, waist circumference, illness perception and, knowledge level about diabetes. Patient knowledge was assessed with the Pre-diabetes Knowledge Measurement Questionnaire, and illness perception was measured using the Illness Perception Questionnaire-Revised. The pharmacist's impact on diabetes care was assessed through pre-and-post-intervention comparision,with significance was set at $p < 0.05$.
Results: A total of 145 patients, comprising 66 with prediabetes patients, were included in the study. The mean age of the PD was 45.79 ± 1.40 years. After a 90-day interval, statistically significant differences were observed in weight, waist circumference, blood glucose, cholesterol, glycolased hemoglobin, and HOMA-IR levels ($p < 0.05$). Additionally, there were statistically significant differences in Prediabetes Knowledge Measurement Questionnaire and Illness Perception Questionnaire-Revised scores in the PD ($p < 0.05$).
Conclusion: Pharmaceutical care services provided to prediabetes patients positively impacted disease prognosis, knowledge levels, and disease perceptions. Pharmacist interventions could prevent or delay the progression of prediabetes to Type 2 diabetes.

PP087

ANALYSIS OF PHARMACY STUDENT FEEDBACK ON HOSPITAL EXPERIENTIAL PLACEMENTS.

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Background: Pharmacy students undertake experiential learning placements in a hospital setting to develop clinical and prescribing skills, for example medication history taking, reconciliation and review, discharge, case based discussion. Students are supported by a clinical education team and pharmacist supervisors in an authentic environment with real patients.
Aim: To analyse feedback from 2nd to 4th year pharmacy students who attended Northern Health and Social Care Trust (NHSCT) hospitals for their experiential learning placements.
Method: All 2nd, 3rd and 4th year pharmacy students attending placement in NHSCT were asked to complete an online feedback form. The forms were collated and analysed for quantitative and qualitative data.
Results: Students across three year groups attended NHSCT for their pharmacy placement (n = 125). There was an overall response rate of 77.4% (65.7–83.3%). Students gave their placement an overall rating of 4.6 out of 5. All respondents across all year groups agreed or strongly agreed that they had received a warm welcome and felt more confident and competent using their clinical placement skills with patients. Students agreed or strongly agreed that they had an opportunity to interact with a number of patients (94.0%), to develop communication and consultation skills (98.1%) and they received sufficient support from their pharmacist supervisor (95.8%). They were inspired by the pharmacists they interacted with (93.5%) and were better prepared to be a pharmacist (97.7%). Qualitative data included areas of good practice, learning identified and things they would change.
Conclusion: Pharmacy students on experiential learning hospital placements in NHSCT highly rated their placements. They developed skills and confidence in interacting with patients and felt inspired by their pharmacist supervisors role models. The students stated that there were more prepared to be a pharmacist.
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PP088

A QUESTIONNAIRE STUDY ABOUT CLINICAL PHARMACY CONDUCTED AMONG MEDICAL STUDENTS IN POLAND: PRELIMINARY STUDY

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Background: Clinical pharmacy is a new area related to pharmacists' intervention in Poland. Clinical pharmacy is an area of pharmacy that includes the scientific knowledge and practice of the rational use of drugs. The awareness of the clinical pharmacy services among the medical students in Poland seems to be important in future implementation in this area.
Aim: The aim of the questionnaire study was to carry out the level of knowledge about the clinical pharmacy services among students of medical faculties (pharmacy, medicine, dentistry, nursing and other medical fields).
Method: The study was conducted as an anonymous, questionnaire study among students. The number of 305 responses were received. Among the respondents: (1) 64.5% were students of pharmacy, (2) 29% of respondents were medical students, (3) 1.6% of respondents were dentistry students, (4) 1.6% of nursing students and (5) 3.2% of the other medical fields. 29% of them were 5th year students, 14.5%—4th year students, 17.7%- 3rd year students, 14.5%—2nd year students and 19.4% of the respondents were 1st year students. The questions were closed questions, mostly single-choice.
Results: The following areas were indicated by respondents as key in the clinical pharmacy: optimization of pharmacotherapy in liver and kidney failure (88%), optimization of pharmacotherapy in pediatric and geriatric population, during pregnancy (92%) and TDM (87%). 75% of respondents indicated that the cost-optimalization of pharmacotherapy and membership in the hospital therapeutic committees (73%) are important. 67% of students indicated the pharmacist's participation in clinical trials as one of the task, and 55% of respondents answered that a clinical pharmacist is an important participant in doctor's rounds. 45% of students indicated medication reconciliation as the clinical pharmacy service. 42- 50% of respondents indicate that the role of a clinical pharmacist is to prepare chemotherapy, parenteral nutrition and drug compounding. 55.7% of the students indicated that clinical pharmacists work in hospitals in Poland. while 18% indicated that they don't. 73.8% of respondents confirmed that a clinical pharmacist is important in health care system.
Conclusion: According to the results of the preliminary study, the awareness among the medical students about the clinical pharmacy services is observed in Poland but still clinical pharmacist is identified with the role of hospital pharmacist. As far as the effective implementation of the clinical pharmacy services in hospitals in Poland are

concerned, the cooperation with doctors (98.4%), nurses (86.9%) and other pharmacists (83.6%) is a key factor.

PP089

TEACHING PHARMACEUTICAL CARE PRACTICE AT LOYOLA ANDALUCIA UNIVERSITY (CHAPTER I: HEALTH ANTHROPOLOGY)

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Background: At Universidad Loyola Andalucía, training in Pharmaceutical Care is designed to improve medication outcomes through a humanistic approach centered on the concept of Medication Experience. During the second year, students start working with real patients in the Health Anthropology course to understand their Medication Experience of patients.
Aim: Students of the Health Anthropology course in the Pharmacy Degree program at Universidad Loyola Andalucía were invited to participate to explore the Medication Experience of patients with diabetes. This research was approved by the Ethics Committee of the University.
Method: 64 students from the Health Anthropology course receive training on the Medication Experience, according to the proposals of Cipolle, Strand, and Morley concept and observe 4 live interviews in class with real patients with diabetes.Throughout the course, students also completed the same survey three times regarding their knowledge of the biomedical and psychosocial aspects of diabetes. Later, each student recruited a patient with diabetes to interview them and understand the meanings of the disease from biomedical, psychological, and social perspectives.
Results: 1. Survey conducted among the students regarding their knowledge of the dimensions of diabetes:
The use of this methodology (% agreed 0 completely agreed)
Has increased my motivation and participation in class (84%).
Has facilitated my learning in Health Anthropology (93%).
I prefer traditional methods (22%).
I am satisfied with it for continuous assessment (90%).
I find it challenging to extrapolate to other subjects (22%).
2. 89% of the students obtained a grade of B or A. Only one student did not pass the course.
Conclusion: Questions asked to students demonstrated an evolution from a more biomedical perspective to a more holistic view of diabetes. The use of teaching methodologies based on real patients improves the academic performance of students and facilitates the internalisation of essential concepts for the practice of pharmaceutical care.

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PP090

EVALUATION OF A COMPREHENSIVE TRAINING PROGRAM FOR HOSPITAL-BASED CLINICAL PHARMACISTS

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Background: A comprehensive training program for hospital-based clinical pharmacists conducting patient-centered tasks was developed to standardise clinical pharmacy services and strengthen the pharmacists' theoretical knowledge, practical skills, and confidence in patient-centered tasks. The program has been completed by more than 100 clinical pharmacists since 2012.
Aim: The aim is to describe the last four years results of the participants evaluations of the training program for hospital-based clinical pharmacists.
Method: Part one of training program is a three-day theoretical course of various learning activities including an in-person simulation lab with the opportunity to watch their performance on video retrospectively. The first two days of the theoretical course are in-person, and the third day a digital meeting. Part two comprises around eight days of clinical activities involving hospitalised patients under individual clinical supervision. Part three is clinical work conducted independently and presented to a clinical supervisor for feedback. A digital questionnaire was sent to all participants and open-ended questions were analysed using inductive thematic analysis.
Results: Of the 46 course participants attending the five training courses arranged the last four years, 39 (85%) completed the digital questionnaire. Preliminary findings revealed the positive factors for learning to be: *various and active learning methods*, *small group size*, *learning from and with peers* and *relevance to working life. Technical difficulties during digital meetings* and *less participation in digital meetings* were addressed by some of the course participants as barriers to learning.
Conclusion: The course participants evaluations of the training program revealed several positive factors for learning. Various and active learning in small groups of peers seem to contribute to enhancing clinical pharmacists learning outcomes and making them more professionally confident in the clinical hospital setting.

PP091

INSIGHTS INTO SEASONAL INFLUENZA VACCINATION AMONG HEALTH SCIENCE STUDENTS: KNOWLEDGE, ATTITUDES, AND BARRIERS

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Background: Seasonal influenza is an acute respiratory infection caused by influenza viruses that are distributed worldwide. The decision to get a seasonal flu vaccination is affected by several factors, including an individual's understanding and attitudes regarding the vaccine.

Aim: The aim of this study is to gather data on the attitudes and knowledge levels of students enrolled in various health science departments towards seasonal flu vaccination. Additionally, the study intends to understand the students' perspectives of the obstacles to receiving the seasonal flu vaccine.
Method: This study is an observational, cross-sectional, descriptive research. Subsequent to receiving approval from the Ethics Committee of Altınbaş University, a Google Forms survey was created and disseminated through LinkedIn and WhatsApp to an extensive cohort of health care students attending numerous universities between December 2023 and March 2024.
Results: Our study included 312 students, with a mean age of 23.25 ± 2.484, and 72.4% were female. 48.4% of the them have previously received flu vaccination administration. For the majority of students —34.9%—pharmacists were the primary source of information about the influenza vaccine, followed by doctors (25.6%) and families (23.1%).
52.6% of the students responded that all patients, especially those with chronic illnesses, would benefit from the vaccine. 42.3% of students were aware that the vaccination against influenza should be given several months ahead of time, and 74% of them correctly indicated that the vaccination should be given annually, both indicating a significant difference. 68.6% of respondents did not believe that the vaccination increased the patients' risk of infection. For the knowledge questions, the students' average percentage of correct answers was 59.3.
Conclusion: The survey indicated that the healthcare students' knowledge seemed moderate. In order to maintain the public's health and encourage informed decision-making, it is important that there be extensive education about flu vaccine.

PP092

AN ANALYSIS OF PHARMACOTHERAPY CURRICULA IN FACULTIES OF PHARMACY: UNVEILING DISCREPANCIES AND PAVING THE WAY FOR STANDARDIZATION

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Background: Pharmacists manage medication therapy across diverse disease states (> 300), necessitating a comprehensive educational approach. Education must go beyond drugs to include patient safety, pharmacogenomics, & all ages. Current resources (American College of Clinical Pharmacy [ACCP] Toolkits) lack regional fit due to healthcare, disease, & education variations.
Aim: This study aims to evaluate the current state of pharmacotherapy education in Turkish pharmacy schools, identifying challenges and potential improvement opportunities.
Method: A 27-item survey, developed and pilot-tested using the Delphi method, was distributed to pharmacy educators across Turkish and North Cyprus universities. This cross-sectional study explores current practices in delivering and assessing pharmacotherapy education.
Results: Ten responses from nine universities were received. Only 30% reported consistently integrating hospital internships, while 40% used active learning methods. The average credit allocation for pharmacotherapy courses was 10.9 h (range 6–14). Sixty percent of respondents lacked training involving interaction with other healthcare professionals. Approximately 30% deemed pharmacotherapy coverage insufficient, with oncology pharmacotherapy and clinical pharmacy services training most frequently cited as inadequate. Faculty and staff shortages (90%) and a lack of collaboration between academia, practice, and regulatory sectors (70%) were identified as the primary barriers hindering curriculum delivery.
Conclusion: The study revealed significant variations in teaching and practical training delivery across Turkish universities. Educators consistently emphasized the need for enhanced practical training and a solution to faculty shortages. This study underscores the necessity for a unified curriculum guideline or toolkit promoting standardized core competencies, thus fostering a more uniform pharmacy workforce equipped to address global health challenges.
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PP093

EDUCATIONAL NEEDS OF MEMBERS OF THE EUROPEAN SOCIETY OF CLINICAL PHARMACY

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Background: The European Society of Clinical Pharmacy (ESCP) is an international scientific society connecting clinical practitioners, researchers, and educators. The ESCP helps to improve knowledge and skills of its members by various educational initiatives and events.
Aim: The aim was to assess the current educational needs of the ESCP members, and to identify educational activities that could be delivered by the society and potential barriers to participation at ESCP educational events.
Method: The Educational Committee of the ESCP prepared an online voluntary, anonymous questionnaire using Microsoft Forms to send to all the ESCP members. The survey was sent to all ESCP members via email on 15th May 2024 and two reminder email are planned. The abstract shows the preliminary results after two weeks dissemination.
Results: Fifty-three responses were received from 417 members in the first 2 weeks since distribution. Respondents live in 19 different countries and were, in the majority, pharmacists (89%). The main place of practice is community pharmacy (28%), academia (21%) or clinical pharmacy department (19%) and 79% have been working for less than 20 years. Respondents were mostly looking for online educational activities (81%) and 85% described events provided by the ESCP as important or extremely important. The main reasons to participate were to exchange ideas or experience (70%) and to gain new knowledge (64%) and skills (64%). The main facilitators for participation were topics and time with the main barriers being time, cost or lack of information about the event. Regarding future events, respondents were mainly interested in respiratory (55%) and circulatory systems disease (49%) as well as pharmacotherapy of specific diseases (81%) and teaching skills in clinical pharmacy (72%).
Conclusion: Information obtained from this questionnaire will serve as a base to improve existing educational activities and to develop new activities for ESCP members.
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PP094

QUALITY OF LIFE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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Background: The objective of our study was to assess the impact of Inflammatory Bowel Disease (IBD) on quality of life (QoL) in patients diagnosed with IBD using the IBDQ-9 questionnaire.
Aim: Sociodemographic and clinical variables were recorded. QOL was assessed using the IBDQ-9 which consists of 9 questions with 7 possible answers, scored according to the perception of IBD; 1 being the worst and 7 the best perception.
Method: Cross-sectional descriptive study between January 2022-March 2024. QoL was assessed in patients diagnosed with IBD under treatment with biological therapies in a second level hospital.
Results: 180 patients were included, 47 with ulcerative colitis and 133 with Crohn's disease, 51.1% were male. Median age was 52 years (16–82). The frequency in the number of bowel movements was normal or minimal increase for 78.3%; 13.3% slight-moderate and 8.4% very frequent. In relation to fatigue, 27.2% were tired almost always, 35% seldom and 37.8% almost never or never. 26.7% reported no or little energy, followed by 64.4% with quite a lot of energy and 8.9% with a lot of energy. 10.0% almost always had to postpone or cancel a social engagement because of IBD, 12.2% rarely and 77.8% almost never or never. The frequency of cramps was always in 14.4%, 33.9% rarely and 51.7% never or almost never. Nausea was almost always (4.4%), rarely (10.6%) and never or almost never (85%). If the presence of gas was considered a problem, 10.6% reported a major problem, 34.4% a minor and 55% no problem. Evaluating the emotional impact, 19.4% being quite dissatisfied, 48.4% quite satisfied and 32.2% very satisfied. The overall median QoL was 67.5 (30.3–93.1).
Conclusion: The assessment of quality of life (QOL) is important for measuring the impact of chronic diseases. It is determined not only by physical well-being, but also by mental state, degree of social support, the effects of treatment and the presence of complications. QoL should be evaluated as an integral part of the management of IBD patients. Our population analyzed reflects a relatively good QoL.

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PP095

DESIGN OF AN OBJECTIVE STRUCTURED CLINICAL EXAM FOR TRAINEES IN HOSPITAL PHARMACY

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Background: Objective Structured Clinical Exam (OSCE) is a teaching tool that has proven to be very useful in assessing the competencies and skills acquired by students. Carrying out this evaluation system for trainees doing internships in the hospital's Pharmacy Service may be very efficient.
Aim: To describe the process of design a OSCE for students who make internships in the hospital Pharmacy Service of a third-level hospital. The purpose is to verify that the students can demonstrate what they have learned during their training period. To do this, different skills will be evaluated, simulating real situations related to the Pharmacy Service.
Method: Were designed live OSCE station and written OSCE stations. In each one, the student had a limited time to perform the task indicated. When time was up, they were asked to move to next station. In live stations, there was an actor to simulate a patient interacting directly with the students. The documentation common to all stations was: basic station information, starting position for the trainee and station script. Additionally, a checklist was elaborated to evaluate different skills: clinical, technical, communication and education. Finally, pharmacists from the Pharmacy Service were selected to perform the assessment.
Results: Were performed 2 live stations: Pharmaceutical care in patients treated with darbepoetin and Pharmaceutical care for patients treated with capecitabine. There were 4 written stations: Stock management, Pharmaceutical compounding of an oral suspension, Medication reconciliation and Evaluation of new drugs. A total of 24 students were examined. They had 6 min to execute each station. The OSCE was structured in a wheel system with 6 different cabins simulating real areas of a Pharmacy Service. Photos and furniture were used according to each area and loudspeakers were also used to indicate the time elapsed. Every station rated each competency with a different percentage. For example, in station number 2, the clinical skills were worth 40%, technical skills another 40% and education skills accounted for 20% of the grade. The final score was rate out of 100. The station with best results was Medication reconciliation, with an average grade of 92.31 points. Trainees got their worst scores in station number 4, with an average of 83.10 points.
Conclusion: The OSCE for internship students in the Pharmacy Service is a very useful tool to have an objective information about the teaching role of the pharmacists. In addition, the student learns about clinical reasoning, decision making, problem solving, and interpersonal relationship skills. The designed stations allow us to know if the trainee knows how to perform the task with independence and autonomy.

PP096

EVALUATING THE USE OF VIRTUAL SIMULATION TO SUPPORT PHARMACY STUDENTS' COMPETENCY DEVELOPMENT IN DISPENSING

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Background: The incorporation of digital health technologies, such as MyDispense, in undergraduate pharmacy education provides a simulated opportunity to support students' competency development in dispensing tasks. However, there is a significant gap in understanding the processes by which students develop their dispensing competencies.
Aim: Therefore, this study aimed to evaluate, using the Kirkpatrick's Model of Training Evaluation, changes in students' self-reported reaction (satisfaction, engagement and perceived relevance), learning (knowledge and confidence), and accuracy in performing dispensing tasks following the use of MyDispense over a period of one semester.

Method: Sixteen MyDispense cases simulating real-practice pharmacy scenarios were created for 55 professional year one pharmacy students as part of a professional skills course. A pre-post survey, based on Kirkpatrick's Model of Training Evaluation, was conducted to evaluate how MyDispense supported their development of dispensing competencies. A virtual formative assessment was done to compare students' self-reported accuracy with faculty assessment scores.
Results: The study showed a significant increase in students' confidence after using MyDispense, leading to a significant improvement in the "learning" level of Kirkpatrick's Model. No significant changes were observed in "reaction" level and sub-levels. A discrepancy was observed between students' self-assessment scores and faculty assessment scores, with students overestimating their performances. Correlation analysis showed no significant relationship between students' self-assessment scores and their learning level.
Conclusion: This study highlights the positive impact of MyDispense on pharmacy students' confidence in dispensing. However, further studies are needed to assess whether virtual simulation training would be most effective when combined with experiential training placements, ultimately maximizing students' learning outcomes and dispensing skills.

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PP097

EMPOWERING EARLY CAREER PHARMACISTS: UNLEASHING NON-CLINICAL COMPETENCIES THROUGH PHARMACY RESIDENCY

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Background: Pharmacy residency programs traditionally prioritise clinical skills development. However, non-clinical competencies, such as leadership, conducting education, and innovation are now emerging as pivotal factors in early-career pharmacist development. The extent to which these non-clinical skills are effectively fostered by residency programs remains unclear.
Aim: This study aims to explore how residency programs propel the development of crucial non-clinical competencies such as leadership, conducting education, and innovation.
Method: Participants pharmacists who completed a foundation residency program and their preceptors from a tertiary teaching hospital took part in semi-structured interviews. Thematic analysis, employing an inductive approach and aided by NVivo software, was used to identify recurrent themes in the interview responses.
Results: Competency development was shaped by four key themes: system-dependent facilitators, system-dependent barriers, individual resident attitudes, and pharmacy department influences. The structure of the residency program was perceived to strongly support competency development in conducting education. The impact on the leadership and innovation competencies development was comparatively lesser.
Conclusion: Residency is perceived as effective in supporting non-clinical competency development when there is a clear structured framework with objectives and guidance for pre-defined activities and tasks known to support competency development. Ambiguity and a lack of standardized guidance in developing specific competencies were identified as factors that diminish their relevance for both residents and preceptors. To enhance residency programs, it is essential to establish clear frameworks, with predefined objectives known to support competency development.
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PP098

CLINICAL IMPACT OF DIHYDROPYRIMIDINE DEHYDROGENASE ENZYME GENOTYPING IN PATIENTS: CANDIDATES FOR TREATMENT WITH FLUOROPYRIMIDINES.

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Background: 5-fluorouracil (5-FU) and oral fuoropyrimidines, such as capecitabine, can cause severe and even fatal toxicity. This toxicity is often related to partial or complete deficiency of the enzyme dihydropyrimidine dehydrogenase (DPYD).
Aim: To analyze the prevalence of DPYD polymorphisms in patients as candidates for treatment with fluoropyrimidines and their clinical impact on the prevention and management of toxicities.
Method: Cross-sectional descriptive observational study of patients who were candidates for treatment with fluoropyrimidines and who were tested for the DPYD polymorphism in 2023. Polymorphisms c.1905 + 1G > A, c.1679 T > G, c.2846A > T and c.1129–5923 C/G associated with c.1236 G/A were determined by real-time PCR using specific fluorescent probes. Demographic (age, sex) and clinical variables (ECOG, stage, primary tumor location, QT type, intention to treat, DPYD polymorphism, dose adjustment according to polymorphism, type of toxicity and treatment modifications (dose reduction, therapeutic rest) were collected.
Results: During 2023, 82 patients were genotyped, 39% women and 61% men, 67 received treatment with fluoropyrimidines (81.7%), 45 with capecitabine (54.9%) and 22 with 5-FU (26.8%). The median age was 65.5 years, range (40–95). In 97.2% of the cases the request for genotyping was due to screening prior to the start of treatment and in only 2 patients was it motivated by previous toxicity. Only 4 cases with heterozygous DPYD polymorphism were identified (4.8%), 3 with c1129-5923 C/G polymorphism and 1 with c. 1905 + 1 G > A polymorphism. The initial dose was reduced by 50% in 3 patients, 2 with the c.1129–5923 C/G variant and 1 with the c.1905 + 1 G > A variant and an initial 25% reduction in 1 patient with the variant c. 1129–5923 C/G variant requiring additional dose reduction to 60% due to G2 asthenia. Only one patient presented severe toxicity despite reducing the doses by 50%; he presented unacceptable skin toxicity that forced treatment to be suspended. One patient required admission during the last cycle of chemotherapy due to diarrheal syndrome and another patient delayed treatment due to anemia, requiring supportive treatment with erythropoietin.

Conclusion: The prevalence of carriers of DPYD gene variants in our sample is low and similar to that of the Caucasian population, confirming the clinical impact of the relationship between the presence of these genetic variants and the appearance of severe toxicity. The availability of DPYD genotyping routinely in clinical practice and the corresponding dose adjustment prior to the initiation of treatment, allows the severity of adverse reactions to be reduced.

PP099

EFFECTIVENESS AND SAFETY OF PANITUMUMAB IN RECTAL AND COLON ADENOCARCINOMAS

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Background: Colon adenocarcinoma is a type of malignant tumor characterized by rapid growth, easy to generate metastasis and aggressive nature.
Aim: To analyze the effectiveness and safety of panitumumab in the treatment of colon and rectal adenocarcinoma.
Method: Descriptive retrospective observational study. Patients receiving treatment with Panitumumab 6 mg/m2 every 15 days associated with FOLFOX (folinic acid, fluorouracil, and oxaliplatin) were analyzed. The data was obtained from the FARMIS-ONCOFARM® programs and from the review of clinical and analytical records using the DIRAYA®. Patients diagnosed with colon or rectal adenocarcinoma were included, who started treatment from January 2015 to May 2022, both inclusive. Progression-free survival (PFS) was considered as an effectiveness criterion, and relevant adverse reactions and dose interruptions or reductions made as safety criteria were analyzed.
Results: Five patients with rectal adenocarcinoma and six with colon adenocarcinoma were included. Treatments were started in 8 patients as first metastatic line, as second metastatic line in 2 patients, and in one patient as third metastatic line. The median number of treatment cycles administered until progression was 11 and PFS was 6 months. During the treatment period, 7 cases of skin rash of different degrees were reported, which required a 25% dose reduction in 3 patients, and temporary suspension in one of them. Other reported adverse reactions were: mucositis (2), vomiting (2) and asthenia (1).
Conclusion: The progression-free survival obtained in our patients was modest, although the type of pathology treated and the advanced stage of the disease in which the patients started treatment must be taken into account. It is important to monitor the appearance of rash, a reaction for which it is recommended to use prophylaxis with photoprotective creams.

PP100

IMPLEMENTATION AND ACTIVITY ANALYSIS OF A CLINICAL PHARMACOKINETICS CIRCUIT IN A SECOND LEVEL HOSPITAL

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Background: Pharmacokinetics studies the effects of drugs on people from their administration to their elimination by monitoring drug concentrations in blood. Drug monitoring is of great importance in the clinical follow-up of the patient to adapt dosing regimens and to avoid adverse effects or drug intoxication.
Aim: To describe the pharmacokinetics circuit developed in a second-level hospital and to analyze the activity from January to April 2024.
Method: The pharmacokinetics circuit is based on the monitoring of two drugs: Digoxin and Vancomycin. After analyzing drug levels in blood, the pharmacist obtains demographics information about the patient, the pathology and the dosage regimen and usual dose. The data are entered into the Pharmacokinetic System (PKS) software, which makes an individual estimate of the patient's pharmacokinetic parameters and allows the adjustment of the dose needed to reach blood concentrations within the therapeutic range of the drug. With the data obtained, a report is prepared with the assessment and dosage recommendations considered by the pharmacist.
Results: During the study period, 49 patients were included in the pharmacokinetics circuit (61% men) with a mean age of 72 ± 16 years. A total of 60 pharmacokinetic reports were performed. 27% of the patients were derived from Primary Care, while 73% from the hospital, mainly from the services of: Internal Medicine (25%), Surgery (13.33%), Emergencies (13.33%), Nephrology (5%), Oncology (3.33%) and Pneumology (1.66%). A pharmacokinetic study of Digoxin was carried out on 52% of the patients, while 48% on Vancomycin. The drug regimen was maintained in 31.66% of the patients, while dosage modifications were recommended in 48.33%. On the one hand, 51.72% were dose increases: 13.33% for Digoxin and 86.66% for Vancomycin. On the other hand, 48.27% were dose decreases: 71.43% for Digoxin and 28.57% for Vancomycin. In 18.33% of patients, treatment was suspended due to detecting levels above the therapeutic range, compatible with intoxication: 82% with Digoxin and 18% with Vancomycin.
Conclusion: The development of pharmacokinetics circuit has become a useful and necessary tool for monitoring serum drug levels. This makes it possible to adjust the doses to the needs and parameters of each specific patient, individualizing the pharmacological regimen and increasing patient safety: during the study period, a total of 11 intoxications in patients were avoided. Internal Medicine was the medical service with the greatest impact on pharmacokinetics reports.

PP101

EVALUATION OF THE INFLUENCE OF RENAL FUNCTION ON LINEZOLID THERAPEUTIC DRUG MONITORING.

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Background: Renal function appears to be a relevant factor influencing linezolid exposure.
Aim: Assess the impact of renal function on plasma concentrations of linezolid in order to establish glomerular filtration rate (GFR) ranges and standard dosing of linezolid.
Method: Descriptive, retrospective study lasting 12 months was conducted to determine the minimum concentrations of linezolid (CminL). All patients wereinitiated treatment with the standard dose (600 mg c/12 h). Optimal therapeutic range of linezolid was established at 2–7 ng/mL. Patient weight, height and renal function was recorded using estimated creatinine clearance (ClCr) calculated by the CKD-EPI formula. Mean CminL levels were compared among patients with values < 2 and > 2 mcg/mL, and < 7 and > 7 mcg/mL.

Finally, the influence of ClCr on CminL was examined using the Student's T-test after verifying normal distribution ($p < 0.05$ were deemed statistically significant).
Results: A total of 87 patients (37 females) were included with a median age of 76 years (range: 33–95), and a total of 118 CminL samples. The median [range] weight, height, and ClCr were 70 [39–156] kg, 160 [142–181] cm, and 50 [3–130] mL/min, respectively. The median CminL in patients with ClCr < 50 and > 50 mL/min was 10.7 and 7.1 mcg/mL, respectively, with a statistically significant difference (p: 0.009). In patients with CminL < 7 and > 7 mcg/mL, mean ClCr values of 71 and 53 mL/min were observed, respectively (p: 0.005). Likewise, in patients with CminL < 2 and > 2 mcg/mL, mean ClCr values of 80 and 58 mL/min were observed, respectively (p: 0.003).
Conclusion: It is established that with the standard dose of linezolid of 600 mg c/12 h, therapeutic range concentrations can be achieved for ClCr between 58 and 71 mL/min. In patients with ClCr below 53 mL/min and above 80 mL/min, the probability of reaching concentrations outside the therapeutic range is higher.
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PP102

VORICONAZOLE DOSE PERSONALIZATION THROUGH THERAPEUTIC DRUG MONITORING

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Background: The existing intra- and inter-individual variability in voriconazole concentrations creates the need to measure its plasmatic concentrations.
Aim: The objective of the work has been to evaluate the implementation of a voriconazole (Vz) therapeutic drug monitoring program in a second level hospital.
Method: Retrospective observational study from January 2020-April 2023 in which Vz concentrations were collected. All patients who began Vz treatment were included and their concentrations were determined between 3–5 days. This first measurement evaluated the number of patients who did not reach the therapeutic range (1–5 mcg/ml). Vz concentrations were analyzed by immunoassay. A dose change proposal was made if necessary in order to achieve the therapeutic range objective. Data collected: number of patients (sex and age) treated with Vz and samples analyzed. Initial dose of Vz and proposed changes. Finally, the Vz concentration was collected after the dose change.
Results: 64 patients were included in the study (61% men, with a median age of 69 years (Range: 18–94)), in which 193 samples were analyzed (Median: 2; Range: 1–14). All patients started treatment with Vz according to the dose suggested by the data sheet. The median concentration obtained in the first analysis was 3.25 mcg/mL (± 2,71) mcg/mL. In this first sampling, 48% of the patients obtained concentrations out of range (15% infratherapeutic and 33% supratherapeutic). 41 patients had a second or subsequent samples, for different reasons (no need for treatment, exodus or absence of tracking…). With the proposed dose changes, 85% of patients managed to reach the therapeutic range. The median concentrations obtained after dose adjustment were 2,95 (± 3,12) mcg/mL. Finally, 6 patients required a change of antifungal (all of them for isavuconazole), due to the oscillation of their Vz concentrations and the difficulty of keeping them in therapeutic range.
Conclusion: Determination of plasma concentrations is an objective aid in the management of patients receiving treatment with Vz.
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PP103

TEICOPLANIN TROUGH LEVEL MONITORING OF ADULT CRITICALLY ILL PATIENTS: A PROSPECTIVE LONGITUDINAL STUDY

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Background: In the literature, therapeutic drug monitoring (TDM) of teicoplanin, a glycopeptide antibiotic, is recommended in critically ill patient population, and the blood trough level for methicillin-resistant *Staphylococcus aureus* (MRSA) treatment is reported to be 10 mg/L.
Aim: The aim of this prospective study was to evaluate the target (10 mg/L) attainment rate of critically ill patients hospitalized in the anesthesiology and reanimation ICU and the factors hypothesized to influence attaining the target trough level.
Method: This prospective longitudinal study was conducted in two university-affiliated tertiary care hospitals from May 2022 to July 2023. The estimated creatinine clearance (eCrCl) was calculated using Cockcroft-Gault equation. The blood samples for trough level measurement were collected on the fourth day of the teicoplanin treatment. The teicoplanin trough levels were measured using a validated liquid chromatography tandem mass spectrometry (LC/MS–MS) method. To identify teicoplanin target attainment factors, univariate and multivariate logistic regression was performed.
Results: The LC–MS/MS method was linear in the range of 1.56–100 mg/L ($r^2 = 0.999$). The lower limit of detection and quantification of the method were 0.33 and 1.00 mg/L, respectively. The precision, accuracy, recovery rate, and carry-over were in acceptable limits. In total, 20 patients were included in the study. The administered unit dose of teicoplanin was 5.5 [4.5–6.0] mg/kg. Median teicoplanin plasma trough level in our study sample was 10.2 [7.6–15.3] mg/L, and the target attainment rate was 50%. Trough levels in our study sample were not statistically different from 10 mg/L ($p > 0.05$). The median value of eCrCl of our patient sample was 62.4 [40.0–124.4] mL/min. Patients' laboratory values did not change significantly after teicoplanin treatment ($p > 0.05$), except for erythrocyte count, hemoglobin, and hematocrit values, which decreased significantly ($p < 0.05$). The multivariate analysis found no significant factors affecting target attainment ($p > 0.05$).
Conclusion: This study found that 50% of critically ill patients meet the teicoplanin target with a unit dose of less than 6 mg/kg. This may be due to patients' kidney functions. More large-scale studies are needed to identify risk factors for teicoplanin trough levels and adverse effects. In apart from that, a robust LC–MS/MS quantitation method for teicoplanin was developed.

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PP104

MODEL INFORMED PRECISION DOSING IN CRITICALLY ILL PEDIATRIC PATIENTS: EXPERIENCES FROM A PILOT STUDY

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Background: Model-informed precision dosing (MIPD) also called Target Concentration Intervention (TCI) is a hybrid machine learning/pharmacokinetic approach to optimizing targeted dose using maximum a posteriori (MAP) Bayesian estimation and population-specific parameters such as pharmacokinetic/pharmacodynamic, age, sex, weight.
Aim: This prospective study aimed to compare to MIPD-based dose adjustments versus standard dosing in terms of the duration of treatment, adverse events and mortality.
Method: This pilot study was conducted between January and June 2024 in a Pediatric Intensive Care Unit (PICU). The patients were randomly assigned to MIPD (intervention) and standard (control) dosing. This study used the MIPD tool named InsightRx® program to compare the difference between predicted and observed plasma levels, including patients treated with amikacin, vancomycin, or fluconazole and had at least one therapeutic drug monitoring (TDM) level evaluated. InsightRx uses population-based modeling to predict patients' TDM scores and categorizes them as "poor", "intermediate" or "good" to assess the patient's fit to the model.
Results: Total of 66 patients were admitted to the PICU with relevant treatment, but only 27(40.9%) met inclusion criteria[55.6% males, median age 100 months (range:7–548 months)]. The majority of patients were receiving vancomycin(44.4%), while those receiving amikacin(18.5%) and combination therapy (37.2%) were noted separately. Modeling program predicted that 82.1% of 39 TDM levels would be classified as "good." Total of 7(17.9%) TDMs were subjected to a second assessment, with program correctly identifying 100% of these as within the acceptable level. Based on 39 TDM, only 12(30.8%) recommendations were accepted, with 27 TDM continuing with the existing dose. Of the 12 accepted recommendations, 9 were for dose increase and 3 were for dose reduction. Among the accepted dose recommendations, 7 of them showed the TDM level for the second time and 2 of them were modified and classified as "good"(the first TDM's were poor and intermediate). There were no significant differences between groups in terms of duration of treatment adverse events and mortality.
Conclusion: To the best of our knowledge, this is the first randomized clinical trial to compare MIPD versus standard dosing in children. As the sample size and frequency of TDM increase, the feedforward and predictive power of the models will also increase. Therefore, there is a need to evaluate different populations in different countries, hospitals and PICUs in terms of covariates such as genetics, age groups and dosage guidelines.
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PP105

LC–MS/MS ANALYTICAL METHODS FOR QUANTIFICATION OF THREE ANTICANCER DRUGS IN VOLUMETRIC ABSORPTIVE MICROSAMPLING: APPLICATION TO THERAPEUTIC DRUG MONITORING IN PEDIATRIC POPULATION

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Background: Whilst the concept of Therapeutic Drug Monitoring (TDM) has been proposed for a variety of anticancer drugs, it is not widely used in the oncology practice. In recent years the interest in the use of alternative sampling techniques has been increasing with the aim to facilitate the application of TDM especially in the pediatric population.
Aim: The aim of this study was to develop and validate liquid chromatography-tandem mass spectrometry (LC–MS/MS) methods for the quantification of vincristine, cyclophosphamide, and etoposide in whole blood samples obtained from the pediatric patients using Mitra devices with VAMS (Volumetric Absorptive Microsampling) technology.
Method: Analytes were extracted from VAMS with the mixture of acetonitrile and methanol. Deuterated analogues: vincristine d3 sulfate, cyclophosphamide d4, and etoposide d4 were used as internal standards (IS). Liquid chromatography was carried out on an Exion LC AC HPLC system and the analytes were separated on the Kinetex C18 (50 × 2.1 mm, 2.6 μm) analytical column. A gradient elution program facilitated the separation. Mass spectrometric detection was achieved using a QTRAP 4500 mass spectrometer with an electrospray ionization source. The MRM experiments were conducted in the positive ion mode by monitoring the transitions of the selected precursors to production.
Results: The methods were developed and validated according to EMA guidelines. Concentration ranges were selected based on the expected levels of analysed drugs in biological samples and were from 0.001 to 1 ug/mL for vincristine, from 0.025 to 2 ug/mL for etoposide, and from 0.01 to 2 ug/mL for cyclophosphamide. Accuracy was evaluated as [mean found concentration/theoretical concentration] × 100. Precision was given by the percent relative standard deviations (RSD, CV%). The criteria for acceptability of the data included accuracy within ± 15% deviation from the nominal values and a precision within 15% RSD except for LLOQ, where it should not exceed ± 20% of CV. Between-batch precision and accuracy were determined by repeated analysis on three consecutive days. The deuterated IS compensated for the relative matrix effect and there were no stability problems during the routine analysis of the samples. All developed methods were effectively used to determine the concentrations of vincristine, cyclophosphamide, and etoposide in

blood samples obtained from the pediatric patients using VAMS devices (Bioethics Committee permission no 1072.6120.20.2024).
Conclusion: The potential of LC–MS/MS methods in TDM is growing. Quantification of cytostatic drugs is essential due to the side effects they may cause, as well as the possibility of subtherapeutic concentrations resulting in ineffective treatment. If these drugs can be extracted from microsampling devices and then accurately and precisely quantified, it can facilitate the wider implementation of TDM in oncology. This is especially true for the pediatric population, as it requires only a small sample volume and significantly reduces stress associated with drawing blood for analysis.

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PP106

IMPLEMENTING PHARMACOGENETICS IN CLINICAL CARE IN BELGIUM: A LANDSCAPE STUDY AND ROADMAP TO LOCAL GUIDELINES

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Background: Although pharmacogenetics (PGx) has been around for decades, it is still poorly accepted and integrated in routine care in Belgium due to a lack of local recommendations and unclear ownership.
Aim: This study aims to contribute to the implementation of PGx in clinical practice in Belgium.
Method: First, existing PGx guidelines were compared and evaluated via a multidisciplinary approach within a national PGx working group to propose a list of guidelines that could fit to the Belgian setting. The PharmGKB database was used as the primary resource. Decisions within the PGx working group were based on the level of evidence, clinical relevance, publication date and practical feasibility. In parallel, we explored possible implementation strategies through semi-structured interviews with experts from five hospitals across the United States (U.S.), the Netherlands and Belgium. A qualitative framework analysis was conducted using Nvivo©20.
Results: For 83 actionable gene-drug pairs included in the comparative study, discrepancies between guidelines were found in 75.9% of cases, mostly within the psychotropic drug class. After deliberation within the PGx working group, guidelines for 73 gene-drug pairs were adopted as such or adapted to practical constraints and possibilities within Belgium, and 10 gene-drug pairs were excluded. Interviews revealed that the incorporation of PGx clinical decision support (CDS) issuing alerts for high-risk phenotypes in the patient's electronic health record (EHR), is a valuable tool for the implementation of PGx in clinical practice and should be considered. Additionally, involving hospital pharmacists ensured consistency and continuity in the PGx reporting and routine. However, important barriers were identified, including the absence of a national EHR, a lack of education in PGx in pharmacy and medicine curricula, next to insufficient reimbursement for PGx testing in the Belgian healthcare system in comparison with the Dutch and U.S. system.
Conclusion: Despite current PGx guidelines often display mutual discrepancies, we compiled a list of consensus recommendations. The next step will be validation and endorsement from national professional organizations to support integration into Belgian clinical practice. The integration of active CDS tools, a national EHR, better testing reimbursement and continuing PGx education courses could enhance personalized treatment and avoid suboptimal therapy. Hospital pharmacists should serve as advocates to ensure quality and continuity of the PGx implementation process.

PP107

I CAN CALCULATE THE VANCOMYCIN AUC24 RATIO. AND WHAT IS YOUR UNIQUE SKILL?

THE KEY ROLE OF CLINICAL PHARMACIST IN THE VANCO TDM

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Background: According to current vancomycin therapeutic drug monitoring (TDM) guidelines the AUC24 ratio is used to optimize vancomycin efficacy and reduce nephrotoxicity. Clinical pharmacist can make the necessary pharmacokinetic calculations and recommend appropriate dosage adjustments to achieve therapeutic goals while reducing toxicity and adverse events.
Aim: The aim of this study was to emphasize the role of clinical pharmacist in vancomycin TDM process and document how many patients undergoing vancomycin therapy required dosage modifications based on the pharmacist's AUC24 calculations and PK/PD consultations.
Method: A total of 100 patients (82 adult and 18 pediatric) undergoing intravenous vancomycin therapy lasting over 48 h underwent vancomycin therapeutic drug monitoring. In accordance with the procedure, clinical pharmacist calculated the vancomycin AUC24 ratio from measured peak and trough serum levels and suggested to adjust doses or dosing interval to achieve target AUC24 serum levels of 400–600 mcg/ml*h. The patients' demographic characteristics, wards, creatinine clearance and kidney function were recorded.
Results: The PK/PD pharmacist consultations indicated the need to modify the dosing regimen in 78% of patients (66 adults and 12 pediatric). The calculated AUC24 ratio varied from 254 mcg/ml*h to 1271 mcg/ml*h. In 21.8% (9% adults, 91% pediatric) patients AUC24 equal to 400 mcg/ml*h was not achieved. The consequence of subtherapeutic concentrations may be failure of therapy. Additionally, too low concentration of vancomycin in the blood can cause resistant strains and increases antibiotic resistance among bacteria. In 78,2% (91% adults, 8% pediatric) the AUC24 ratio was over 600 mcg/ml*h which increases the potential risk of nephrotoxicity and ototoxicity.
Conclusion: Vancomycin therapy is highly individualized and must be monitored. The pharmacist with extensive knowledge of pharmacokinetics is uniquely prepared to conduct vancomycin TDM. The clinical pharmacist as a member of an interdisciplinary team supervises the correctness of pharmacotherapy, optimization of drug dosage regimens to achieve the therapeutic goal and reduce the incidence and severity of adverse reactions.

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PP108

REVIEW AND INTERVENTION OF PATIENTS PRESCRIBED OMEGA-3 FATTY ACIDS AND RISK OF ATRIAL FIBRILLATION

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Background: Various clinical trials have highlighted a dose-dependent increased risk of atrial fibrillation (AF) in patients with cardiovascular diseases or cardiovascular risk factors treated with omega-3 fatty acid ethyl esters. The risk of AF was higher at doses ≥ 4 g/day. If AF develops, the medication should be discontinued.
Aim: To identify patients within a Healthcare Management Area (AGS) prescribed with omega-3 fatty acid ethyl esters and at risk of developing AF. To review the appropriateness of this medication based on each patient's characteristics and take appropriate actions.
Method: Patients were selected via MTI(Health Service Information Treatment Module): Patients within the AGS prescribed with ω-3 fatty acid ethyl esters throughout 2023 and with: age ≥ 70 years, cardiovascular risk, anticoagulant therapy, antiplatelet therapy, and/or dual antiplatelet therapy. Medication at doses ≥ 4 g/day. The pharmacist will review each patient's medication based on their characteristics, in collaboration with their primary care physician. After analyzing the appropriateness of the medication, the following interventions will be carried out: discontinue the medication; decrease the dosage; assess the benefit/risk of treatment in patients.
Results: Ninety-three patients meeting the MTI search criteria were identified. All these patients are prescribed the medication and belong to a risk group and/or are on doses ≥ 4 g. The appropriateness of the treatment is specifically analyzed for each patient, and the following interventions are performed: 31 patients: medication is discontinued due to AF diagnosis or assessed risk due to age and/or cardiovascular risk. In the absence of a registered AF diagnosis, the possibility of diagnosis is considered for patients on any direct oral anticoagulant. 22 patients: dosage is decreased due to being ≥ 4 g/day. 40 patients: medication is maintained after assessing the benefit/risk of treatment, especially in patients over 70 years, patients with renal insufficiency, and patients on antiplatelet and/or dual antiplatelet therapy. Out of the 93 patients, 53 were at risk of developing AF due to medication. Interventions were performed by discontinuing the medication or reducing the dosage.
Conclusion: Among the 93 identified, reviewed, and intervened patients prescribed with omega-3 fatty acid ethyl esters, 57% of them, more than half, were at risk of developing AF due to medication overdose or belonging to a risk group. Medication review, especially in high-risk groups, is crucial for patient safety.

PP109

NAVIGATING ANTIFUNGAL THERAPY: VORICONAZOLE-N-OXIDE/VORICONAZOLE RATIO ADVANTAGE ILLUSTRATED IN A CASE REPORT

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Background: Voriconazole, a second-generation triazole antifungal, is widely used for the treatment of fungal infections. TDM is strongly advised due to its unpredictable pharmacokinetic profile & narrow therapeutic range. The drug is extensively metabolized in the liver, mainly through CYP2C19, producing NOX.
Aim: Measuring voriconazole-N-oxide (NOX) and the metabolic ratio provides additional information for voriconazole TDM and dosing.
Method: The practical application of the voriconazole-N-oxide/voriconazole ratio is demonstrated through a case study.
Results: A 51-year-old patient with polytrauma and complex fractures was admitted to the ICU. On day 10, he developed increasing respiratory distress with bilateral infiltrates on RX-thorax. A subsequent bronchoscopy on day 12 revealed massive growth of *Aspergillus fumigatus complex*, confirmed by PCR and a galactomannan index of 2.58, for which voriconazole (VOR) therapy was initiated. TDM on day 5 revealed a low VOR-level of 0.52 µg/mL, necessitating further investigation. Inappropriate sampling and VOR dosing were ruled out, inflammatory status was stable and no drug-drug interaction was detected. The TDM-sample revealed a NOX-level of 4.41 µg/mL with a metabolic ratio of 8.48, suggesting increased metabolism. In response to persistent respiratory distress, our patient was switched to isavuconazole, which does not rely on CYP2C19 metabolism. Genetic analysis identified the presence of one allele with enhanced function of CYP2C19 (CYP2C19*17), categorizing the patient as a rapid metabolizer.
Conclusion: Altered metabolic capacity caused by several clinical conditions (non-compliance, malabsorption, inflammation, drug-drug interactions or genetic polymorphism) can be detected by determining the voriconazole-N-oxide/voriconazole ratio. [2] The metabolic ratio assessment provides useful insights into a patient's voriconazole drug metabolism, facilitating personalized drug dosing.

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PP110

THERAPEUTIC DRUG MONITORING SERVICE AT A PAEDIATRIC INTENSIVE CARE UNIT

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Background: Critically ill paediatric patients tend to have problems related to medication with narrow therapeutic index because of differences in the pharmacokinetic and pharmacodynamic profiles.
Aim: The aim of the study is to identify problems related to medications with narrow therapeutic index in the paediatric intensive care unit (PICU).
Method: In this prospective observation study, clinical pharmacist evaluated appropriateness of therapeutic drug monitoring service in the PICU of university hospital between January and March 2024.
Results: Forty medications were evaluated in nine-teen patients during the study. These medications were vancomycin (n = 13), mikacin (n = 12), phenobarbital (n = 7), valproic acid (n = 3), phenytoin (n = 3) and carbamazepine (n = 2). Seventeen problems related to these medications were identified. Among them, 31.8% was at subtherapeutic levels and 68.1% was at supratherapeutic levels.

The most common medications at subtherapeutic level and supratherapeutic level were valproic acid (71.0%), and vancomycin (53.3%), respectively.
Conclusion: Problems related to medications with narrow therapeutic index was common in PICU. In future study, clinical pharmacist-led therapeutic drug monitoring service could be developed and evaluated to optimize medications used in PICU.
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PP111

MEROPENEM THERAPEUTIC DRUG MONITORING USING A SIMPLE LC–MS METHOD IN PATIENTS HOSPITALIZED AT THE RUŽINOV UNIVERSITY HOSPITAL

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Background: Beta lactam antibiotics (ATBs) are the most administered antimicrobials in intensive care units, where critically ill patients show marked variability in pharmacokinetics. Achieving target therapeutic levels is problematic, since subtherapeutic levels often lead to treatment failure. Moreover, this contributes to the spread of antibiotic resistance[1].
Aim: The aims of this work were: 1) to develop a simple and innovative method for the determination of selected beta lactam ATBs concentration in biological samples and 2) to validate this method for the clinical purposes of TDM application.
Method: The main inclusion criteria was the administration of intravenous meropenem; 14 patients were enrolled in the pilot study between January and March 2024 hospitalized at Bratislava University Hospital. The sampling of peripheral blood was performed 30 min before the subsequent dose of meropenem. The serum concentration of meropenem was determined using a simple on-line LC–MS method with sample pretreatment based on protein precipitation[2]. The serum meropenem concentrations were analyzed using the clinical pharmacokinetics software MWPharm + + based on patients' clinical data.
Results: The results of the pilot study showed that out of 14 patients, 9 patients (64%) had subtherapeutic meropenem concentration at the time of TDM. Only 4 patients (29%) had therapeutic concentrations of meropenem. In one patient the concentration could not be evaluated due to incorrect time of sampling. Three out of the four patients with therapeutic meropenem concentrations had reduced glomerular filtration rate.
Conclusion: The results indicate that almost two-thirds of patients had subtherapeutic levels of the beta lactam ATB meropenem. Underdosing with beta lactam ATBs significantly increases the risk of patient death. The pilot study also highlights the importance of implementing TDM of beta lactam ATBs and presents an important argument for introducing this method into routine clinical practice.

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PP112

ECONOMIC IMPACT OF HOSPITAL PHARMACISTS' ENDORSEMENT OF ANTIPSYCHOTICS

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Background: Pharmaceutical endorsement is the procedure for authorising the prescription of medicines that require special control, either for safety reasons, special conditions of use or selective funding. There is currently some debate among different healthcare professionals about the usefulness and benefit of endorsement.
Aim: To quantify the economic impact of endorsement of antipsychotics by hospital pharmacists.
Method: To determine the impact of endorsement on pharmaceutical spending, MICROSTRATEGY ® programme was used to obtain the amount of prescriptions for antipsychotics in the population of Campo Gibraltar in 2020 and 2021 (when the endorsement of antipsychotics was not yet in place) and in 2022 (when the endorsement was introduced). The data collected were the amount, number of packages dispensed in each period and price per pack (p.p.p.).
Results: Spending on antipsychotics in 2020 was 361,250 euros, 384,884 euros in 2021 and 341,140 euros in 2022. Therefore, thanks to the endorsement provided by hospital pharmacists, a prescription saving of 43,744 euros was achieved, which represents 11.37%. In terms of the number of packages, 6,354 were dispensed in 2022, 368 fewer than in 2021, while 387 packages more were dispensed in 2021 than in 2020. With regard to the p.p.p., it only increased by 28% in 2022 compared to 2021, while in 2021 compared to 2020 it decreased by 1%. Therefore, we can conclude that the savings come from the pharmaceutical endorsement.
Conclusion: Pharmaceutical endorsement is useful for reducing pharmaceutical spending. It is a tool that allows medicines to be used more efficiently according to clinical indications.

PP113

ECONOMIC IMPACT OF HOSPITAL PHARMACISTS' ENDORSEMENT OF ANTIDIABETICS

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Background: Pharmaceutical endorsement is the procedure for authorising the prescription of medicines that require special control, either for safety reasons, special conditions of use or selective

funding. There is currently some debate among different healthcare professionals about the usefulness and benefit of endorsement.
Aim: To quantify the economic impact of endorsement of antidiabetics by hospital pharmacists.
Method: To determine the impact of endorsement on pharmaceutical spending, MICROSTRATEGY ® programme was used to obtain the amount of prescriptions for antidiabetics in the population of Campo Gibraltar in 2020 and 2021 (when the endorsement of antidiabetics was not yet in place) and in 2022 (when the endorsement was introduced). The data collected were the amount, number of packages dispensed in each period and price per pack (p.p.p.).
Results: Spending on antidiabetics in 2020 was 173,760 euros, 208,326 euros in 2021 and 173,048 euros in 2022. Therefore, thanks to the endorsement provided by hospital pharmacists, a prescription saving of 35,278 euros was achieved, which represents 16.93%. In terms of the number of packages, 1,399 were dispensed in 2022, 150 fewer than in 2021, while 390 packages more were dispensed in 2021 than in 2020. With regard to the p.p.p., it only decreased by 9% in 2022 compared to 2021, while in 2021 compared to 2020 it decreased by 3%. Therefore, we can conclude that the savings come from the pharmaceutical endorsement.
Conclusion: Pharmaceutical endorsement is useful for reducing pharmaceutical spending. It is a tool that allows medicines to be used more efficiently according to clinical indications.

PP114

ECONOMIC IMPACT OF HOSPITAL PHARMACISTS' ENDORSEMENT OF NEW ORAL ANTICOAGULANTS

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Background: Pharmaceutical endorsement is the procedure for authorising the prescription of medicines that require special control, either for safety reasons, special conditions of use or selective funding. There is currently some debate among different healthcare professionals about the usefulness and benefit of endorsement.
Aim: To quantify the economic impact of endorsement of new oral anticoagulants (NOACs) (apixaban, edoxaban, rivaroxaban and dabigatran) by hospital pharmacists.
Method: To determine the impact of endorsement on pharmaceutical spending, MICROSTRATEGY ® programme was used to obtain the amount of prescriptions for NOACs in the population of Campo Gibraltar in 2020 and 2021 (when the endorsement of NOACs was not yet in place) and in 2022 (when the endorsement was introduced). The data collected were the amount, number of packages dispensed in each period and price per pack (p.p.p.).
Results: Spending on NOACs in 2020 was 293,865 euros, 294,438 euros in 2021 and 224,534 euros in 2022. Therefore, thanks to the endorsement provided by hospital pharmacists, a prescription saving of 69,904 euros was achieved, which represents 23.74%. In terms of the number of packages, 2,762 packages were dispensed in 2022, 672 fewer than in 2021, while only 55 fewer packages were dispensed in 2021 than in 2020. With regard to the p.p.p., it only decreased by 9% in 2022 compared to 2021, while in 2021 compared to 2020 it increased by 7%. Therefore, we can conclude that the savings come from the pharmaceutical endorsement.
Conclusion: Pharmaceutical endorsement is useful for reducing pharmaceutical spending. It is a tool that allows medicines to be used more efficiently according to clinical indications.

PP115

FEBUXOSTAT'S RENOPROTECTIVE EFFECTS AND SAFETY IN HYPERURICEMIA AND CHRONIC KIDNEY DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: The presence of hyperuricemia has been identified as a crucial risk factor that can substantially affect individuals suffering from chronic kidney disease (CKD). In previous studies, febuxostat, a xanthine oxidase inhibitor, has demonstrated potential renoprotective effects in patients with CKD, albeit with inconclusive evidence.
Aim: This systematic review and meta-analysis aimed to assess the renoprotective effects and safety of febuxostat compared to other interventions in CKD patients with hyperuricemia.
Method: We comprehensively searched EMBASE, MEDLINE, and PubMed databases for relevant randomized controlled trials (RCTs) and observational studies published up to March 2024. These studies investigated the renoprotective effects of febuxostat versus other urate-lowering agents or placebos in CKD patients with hyperuricemia. The quality of included RCTs and observational studies was assessed using the Cochrane Collaboration's risk of bias tool and the Newcastle–Ottawa Scale. Pre-specific subgroup analyses were conducted according to different study designs and control arms.
Results: We included 22 studies for meta-analysis. Treatment with febuxostat resulted in a smaller decline in estimated glomerular filtration rate (eGFR) versus other interventions [mean difference (MD): 2.09 mL/min/1.73m^2, 95% Confidence Interval (CI): 1.66 to 2.52, heterogeneity (I^2) = 81%]. In terms of $\geq$ 10% eGFR decline, febuxostat better preserved renal function [risk ratio (RR) = 0.59, 95% CI: 0.41 to 0.84, I^2 = 4%]. The RR for requiring dialysis with febuxostat was 0.60 (95% CI: 0.58 to 0.64, I^2 = 0%). In subgroup analysis, febuxostat, in both RCTs (MD: 2.09 mL/min/1.73m^2, 95% CI: 1.58 to 2.59) and non-RCTs (MD: 2.11 mL/min/1.73m^2, 95% CI: 1.29 to 2.93), resulted in a reduced eGFR decline versus other interventions. Regarding intervention types, febuxostat exhibited a more modest eGFR reduction compared to allopurinol (MD: 2.45 mL/min/1.73m^2, 95% CI: 1.84 to 3.06), benzbromarone (MD: 1.20 mL/min/1.73m^2, 95% CI: -0.61 to 3.02), and others including topiroxostat, placebo, and non-treatment (MD: 1.98 mL/min/1.73m^2, 95% CI: 1.34 to 2.61).
Conclusion: Febuxostat demonstrated a superior renoprotective ability by attenuating the decline in eGFR compared to allopurinol, benzbromarone, and other interventions, including topiroxostat, placebo, and non-treatment. Taking febuxostat also reduced the risk of requiring dialysis. Overall, febuxostat may offer better renoprotective benefits among CKD patients with underlying hyperuricemia.
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PP116

RATIONALITY OF BENZODIAZEPINE USE IN OLDER PATIENTS IN LONG-TERM CARE FACILITIES IN THE CZECH REPUBLIC

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Background: Benzodiazepines (BZD) are one of the most discussed groups of medications potentially inappropriate for older patients. Seniors are vulnerable to their side effects and are at a higher risk of serious medication-related complications, such as orthostatic hypotension, syncope and falls, cognitive impairment, and drug dependence.
Aim: This study aimed to provide current data on the rationality of the use of BZD in Czech long-term care facilities.
Method: 225 patients from 3 regionally distinct facilities in the Czech Republic were included. Data was collected in 2022 and 2023 as a part of the cross-sectional multi-centric international study START/MED/093 "Rational Geriatric Pharmacotherapy, Medication Errors, and Availability of Clinical-Pharmaceutical Services in Long-Term Care." For each patient, a complete list of medications, including dosing and duration of the drug therapy was documented, and comprehensive geriatric assessment was conducted using the interRAI LTCF tool. The overall prevalence of BZD use in the sample and selected potentially problematic aspects of drug therapy with BZDs were analyzed.
Results: The mean age of LTCF residents was 80.0 (± 8,2) years; 66.7% of them were women. The overall prevalence of BZD use was 18.7% (of 225 patients). Specifically, alprazolam (19.0%), bromazepam (14.3%), and oxazepam (69.0%) were the most often prescribed BZDs. The recommended daily geriatric dose was not exceeded in any patient and the recommended individual geriatric dose was exceeded in only 1 patient (the dosage in 7 patients was unknown). The combination of BZDs with sedative medications was present in 24 (57.1%) BZD users. Psychotropic hyperpolypharmacy, defined for the purposes of this study as the use of 4 or more psychotropic medications, was found in 10 (23.8%) of BZD users. Drug interactions (of moderate to severe clinical significance) occurred in the therapy of 2 (4.8%) BZD users and BZDs were indicated for the treatment of insomnia in 4 (9.5%) BZD users. The length of treatment exceeded 4 weeks in 16,7% of BZD users (n = 7), however, it was unknown in 47,6% of users (n = 20).
Conclusion: The current prevalence of the use of BZDs in Czech LTCFs was comparable with results from the Czech Republic in the European SHELTER study (2009–2014) and is substantially lower than the average prevalence in other European countries. Nevertheless, considering the global recommendation on appropriate use of BZDs in geriatric patients, it seems beneficial to further restrict the exposition of Czech seniors to BZDs and particularly to their long-term use, according to positive experience from e.g. Canada on new clinical strategies, such as deprescribing of the BZDs.

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PP117

INCIDENCE AND PREDICTORS FOR POTENTIALLY ADVERSE DRUG EVENT-RELATED HOSPITALISATIONS

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Background: Polypharmacy increases the risk for adverse drug events. As a prevention strategy, clinical guidelines typically recommend a medication review for all people with polypharmacy, which has substantial work load implications but unproven value. It remains unclear, how best to prioritise patients for medication safety interventions in primary care.
Aim: The aim of this study is to examine the incidence and relevant predictors for potentially adverse drug event-related hospitalisations (pADEH) in two Scottish health boards in 2019.
Method: We conducted a population-based cohort study of pADEH among all 421,856 people ≥ 40 years, who were resident in the Tayside and Fife regions of Scotland. The cohort entry date was 01/01/2019. A pADEH was identified when both of the following conditions were met: a) admission with any of 15 prespecified events coded as "main condition" or laboratory finding exceeding a prespecified threshold, and b) dispensing of a drug known to cause such an event in the 90 days prior to admission. We calculated the incidence of the source population with one or more pADEH in 2019, and identified predictors associated with pADEH using multivariate logistic regression.
Results: Our preliminary analyses found that among people aged 40 years or older the overall incidence of the 15 different pADEH in 2019 was 916 per 100,000 residents, with incidences of individual pADEH ranging from 1 to 318 per 100,000 residents. Fall (injuries), bleeding outside the GIT and syncope were the most common pADEH occurring at 318, 100 and 92 per 100,000 residents, respectively. The predictors included in multivariate regression models explained 10.3% in the risk of pADEH. pADEH were most strongly associated with increased age (≥ 80 years vs. 40–64 years: multivariate OR 3.72; 95% CI 3.35–4.14), length of stay in hospital in 2018 (> 30 days vs. 0 days; multivariate OR 2.79; 95% CI 1.94–4.01) and with the number of drugs taken at cohort entry (≥ 15 drugs vs. 5–9 drugs; multivariate OR 1.88; 95% CI 1.66–2.13).
Conclusion: Our preliminary analyses show that pADEH are common. A limited number of predictors explained 10.3% of variation in the risk of all-cause pADEH. Strategies to improve estimation of pADEH risk and prioritisation of patients for medication safety interventions may be achieved by considering specific pADEH rather than all-cause pADEH.

PP118

THE REAL-WORLD EFFECTIVENESS OF TENOFOVIR ALAFENAMIDE IN HBV-RELATED HCC AFTER CURATIVE TREATMENT

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Background: Tumor recurrence following curative treatment is a major issue for HBV-related hepatocellular carcinoma(HCC).

Nucleos(t)ide analogs (NAs) favorably reduce the occurrence and recurrence of HCC in chronic hepatitis B virus (HBV) patients. However, data on tenofovir alafenamide (TAF) was scarce.
Aim: This study aimed to evaluate the real-world effectiveness of TAF therapy in HBV-related early stage HCC after curative treatment.
Method: We conducted a retrospective cohort study by using multi-center electronic medical records database in Taiwan. We included patients with HBV-related early stage (i.e., BCLC stage 0 or A) HCC who received curative therapies, including hepatectomy and radiofrequency ablation from January 1, 2019 to December 31, 2022. Those patients who were antiviral treatment-naïve with TAF before and after one year of surgery date were enrolled. The primary outcome was HCC recurrence. We followed the patients from curative treatment to the occurrence of outcomes, death, the last clinical visit, or June 30, 2023, which came first.
Results: Total 297 patients diagnosed with HBV-related early stage HCC who received curative treatment were included in our study. The mean age of the participants was 61.0 years (SD: 10.2), with the male group comprising 233 individuals (78.5%). Among them, 194 patients (65.3%) received hepatectomy, 158 (53.2%) were classified as BCLC stage A, 227 (76.4%) had a single tumor, 178 (59.9%) had cirrhosis, and 34 (11.5%) patients had the HBV viral load less than 2000 IU/mL. Within a median of 27.3 months follow-up of duration period, 87 patients (27.6%) had HCC recurrence events. In Kaplan–Meier analysis, the median disease free survival (DFS) was non-reach.
Conclusion: Further study with longer follow-up is needed to analyze real-world effectiveness on DFS and overall survival in early-stage HCC patients with TAF treatment.

PP120

COST-EFFECTIVENESS OF CLOBAZAM AS AN ADJUNCTIVE TREATMENT FOR REFRACTORY EPILEPSY IN CHINA

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Background: Epilepsy may cause neurological, cognitive, psychological, and social consequences, affecting approximately 50 million people worldwide. Clobazam is highly selective for the α-2 subunit of the $GABA_A$ receptor and thus exhibits strong anxiolytic and anticonvulsant properties with reduced sedative side effects and good tolerability.
Aim: Clobazam (CLB) is an effective, safe and well-tolerated adjunctive treatment for refractory epilepsy. It was approved for use in China for the first time. However, the cost-effectiveness of CLB in China remains unknown. The objective of this study was to evaluate the cost-effectiveness of CLB as adjunctive therapy for patients deemed refractory epilepsy.
Method: A Markov model was established to simulate the lifetime epilepsy process in patients. The epilepsy remission rate, health state utility and mortality were derived from clinical trials and the literature. Costs were collected from the healthcare system in the hospital and then assessed by experts. The primary outcome was the incremental cost-effectiveness ratio (ICER), calculated by comparing CLB as an add-on therapy with conventional therapy, assessed from the Chinese health system perspective. One-way and probabilistic sensitivity analyses were also conducted to evaluate parameter uncertainty, and several scenario analyses were also conducted.
Results: Compared to maintaining conventional therapy, adding CLB as an adjuvant drug therapy had an increased cost of Chinese Yuan (CNY) 2846 over a lifetime, with an incremental quality-adjusted life years (QALYs) value of 1.1, resulting in an ICER of CNY 2506.99 per QALY gained. The daily dose of CLB had the greatest effect on the ICER. The probabilistic sensitivity analyses showed that the probability of CLB being cost-effective was 80.44% at a willingness-to-pay (WTP) of CNY 85698/QALY. An increased price of CLB leads to an increase in the ICER (CNY 28693.63/QALY). A lower daily dose of CLB improved the ICER to CNY 6599.07 per QALY gained.
Conclusion: CLB is a cost-effective add-on therapy for refractory epilepsy in the Chinese population.

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PP121

USE OF MOBILE MEDICAL APPS BY PATIENTS AND COMMUNITY PHARMACISTS IN PALESTINE: A CROSS-SECTIONAL SURVEY

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Background: Smartphone usage is everywhere, including in resource-limited countries like Palestine. With the spread of mobile applications, numerous healthcare apps have emerged and still emerging, offering the potential to revolutionize patient care and support healthcare professionals, including community pharmacists.
Aim: This study aims to assess the utilization and perceptions of smart devices and medical applications among community pharmacists in Palestine. It also explores the barriers to adoption and patient behaviors regarding the use of these applications.
Method: A cross-sectional study was conducted in 2023 among registered pharmacists in Palestine. Data were collected using a validated questionnaire distributed via social media platforms, achieving a total sample size of 400 respondents.
Results: Among the participants, 79.25% (n = 319) were female and 20.25% (n = 81) were male. The study revealed that pharmacists have positive perceptions regarding the use of medical applications. However, several barriers hinder their practice, such as the need for reliable internet access and the demand for quick service from patients. Additionally, 20.75% (n = 83) strongly agreed that they lose the trust of the patient if they used apps in front of the patient. While 59.5% (n = 38) do not support the use of medical apps by public patients. Upon asking about patients' expression if pharmacists refer to a smart device to solve their inquiries, 19.25% (n = 77) reported that patients become frustrated and hesitant.
Conclusion: Mobile medical applications have significant potential to enhance pharmaceutical care in Palestine. Nevertheless, multiple barriers hinder their widespread adoption. Patients rely on pharmacists for guidance, but often do not trust a pharmacist who consults a digital reference. Therefore, the practice of pharmacy in Palestine requires substantial improvements, particularly in addressing patient perceptions and trust towards pharmacists.

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PP122

DEVELOPMENT OF ALGORITHMS FOR THE DETECTION OF ADVERSE EVENTS IN ELECTRONIC HEALTH RECORDS

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Background: Measurement of adverse events (AEs) is important in order to evaluate the effects of drugs and complex interventions. Validated algorithms are required to enable large-scale or repeated AE detection in the context of pharmacoepidemiological research. Electronic health records (EHRs) offer new opportunities for more precise endpoint measurement.
Aim: The aim was to develop a set of algorithms for clinically relevant AEs that were prioritised in a previously conducted RAND expert consensus process and that can be implemented in EHRs.
Method: The two-stage algorithm development process involved multidisciplinary expert teams from 10 university sites in Germany. For each AE, a lead centre created an initial algorithm that was either based on already existing algorithms (identified through structured literature research), or (if not available) was newly developed. A second centre was responsible for review and revision. The algorithms were finalised by group consensus. The main data categories used for the development of algorithms were ICD-10 codes for diagnoses, ATC codes for medication, LOINC for laboratory values, OPS codes for procedures, and medical findings (e.g. blood pressure).
Results: A total of 82 algorithms were developed for 48 AEs, i.e. an average of two per AE, which differ either in the type and/or number of data categories used (52 single-category algorithms (e.g. bleedings/perforations of the upper gastrointestinal tract) and 30 more complex algorithms (e.g. fall (injuries), delirium, liver damage) consisting of ≥ 2 categories) or in the code selection within the same data category. ICD-10 codes are the most frequently used data category, required for 65 AE algorithms. LOINC are part of 22, ATC codes of 18, OPS codes of 11, and medical findings of 7 algorithms. All algorithms were modelled in the ontology-based TOP framework and will be made publicly available through a GitHub repository.
Conclusion: We present a large number of AE algorithms for use in inpatient EHRs. Further research will establish and compare the sensitivity and specificity of EHR-based versus claims data-based AE algorithms.

PP123

EVALUATING THE SENSITIVITY OF THE MERIE SOFTWARE TOOL IN DETECTING DRUG-RELATED PROBLEMS IN CLINICAL PHARMACY SERVICES

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Background: Clinical pharmacy services in the Czech Republic fall into 2 categories: consultative services requested by physicians, and systematic evaluations of inpatient pharmacotherapy, where clinical pharmacists proactively identify DRPs within patients' medical records. Novel MERIE software solution aid with an initial screening of high-risk patients.
Aim: The primary aim of our study was to evaluate the sensitivity of the MERIE software in the day-to-day practice of a clinical pharmacist for the detection of DRPs, with subsequent confirmation by the clinical pharmacist.
Method: Data analysis was processed from both structured and unstructured medical records to identify risk factors and calculate the likelihood of a DRPs. Data from medical records was gathered from September to December 2023 at the Regional Hospital Benešov, which has 274 beds. A total of 674 patients' medical records were evaluated. The sensitivity of the MERIE software tool for detecting subsequent DRPs was calculated as the proportion of patients predicted by MERIE to be very risky (having the likelihood of a DRPs between 50 and 100 points on the scale from 0 to 100 points) to the total number of patients with DRPs detected and confirmed by clinical pharmacists.
Results: In our pilot study, we identified 224 patients with at least one DRP out of 674 patients. Of these 224 patients, MERIE predicted the likelihood of a DRP occurence in 182 patients. The calculated sensitivity of the MERIE software tool for subsequent DRP detection was 81.25%.
Conclusion: Patient prioritization is essential in demanding and resource-intensive form of systematic clinical pharmaceutical care. Based on these first data, it can be inferred that MERIE is a valuable software tool for routine clinical pharmacy services, capable of predicting 81% of potentially high-risk patients in terms of their DRPs, as subsequently confirmed by a clinical pharmacist.

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PP124

AN EXPLORATORY AUDIT OF HOW COMMUNITY PHARMACIES UTILISE SOCIAL MEDIA

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Background: Social media (SM) platforms offer healthcare professionals like pharmacists a mechanism to share health information [1]. Through SM pharmacists can highlight clinical pharmacy services or engage in health promotion. At present no studies analyse the extent/type of SM usage by community pharmacies.
Aim: The study aim was to provide the first audit of SM use by community pharmacies. It aimed to understand the prevalence of SM use by pharmacies in the Republic of Ireland (ROI) by analysing SM content posted, SM platforms most used, levels of SM activity and engagement with patients.

Method: Registered pharmacies in the ROI as of 15th September 2023 were searched for SM presence using publicly accessible data across the SM platforms Facebook®, Instagram®, X®, LinkedIn® and TikTok®. Presence of an account, content type posted, follower numbers, account creation date and activity level were recorded. Pharmacy location and type (independent/chain) was noted. Data was coded and analysed quantitatively using descriptive and inferential statistics. Chi-squared tests were used to test association between SM use and pharmacy demographics, where $p < 0.050$ denotes statistical significance.
Results: Data from 1900 community pharmacies in the ROI was analysed. Of these, 77.9% had at least one SM account connected to the pharmacy. Facebook® was the most used platform (85.5%), followed by Instagram® (76.7%). Pharmacies which are part of chains were more likely to have at least one SM account (91.4%) versus independent pharmacies (70.2%) ($\chi2 = 114.91$, df = 1, $p < 0.001$). Across all four geographical provinces of ROI, prevalence of SM usage by community pharmacies was similar ($\chi2 = 1.11$, df = 3, $p = 0.776$), with a mean of 77.4%. Of the pharmacies who use SM, 56.8% use their accounts for health promotion activities and to provide advice to patents. Clinical pharmacy services on offer were highlighted in posts by just over half of pharmacies (51.7%). The highest proportion of pharmacies used SM for marketing of items which are sold by the pharmacy (92%). Regarding activity levels, 60.3% of pharmacies had posted on SM at least once in the last month at time of analysis, while 23.6% of SM accounts had been created since 2020.
Conclusion: This study provides the first audit of SM use by community pharmacies. Results from ROI reveal that SM use to interact with patients continues to grow, highlighted by recent SM account creation trends and activity levels. However, scope remains for greater use of SM to promote the role of pharmacies with regard to clinical pharmacy services available and health promotion opportunities. Further research is required to understand the experiences of pharmacists using SM, along with ethical, legal, and professional considerations regarding its use.

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TRAINING SERVICE USERS IN THE USE OF TELEHEALTH: A SCOPING REVIEW

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Background: Telehealth use has rapidly increased since the pandemic and provides an alternative option for healthcare delivery, yet some populations may be disproportionally excluded from their use.(1) Training service users may increase accessibility for certain groups. The extent and nature of these training activities has not been explored.
Aim: The objective of this scoping review was to identify and describe activities for training service users in the use of telehealth.
Method: Five databases were searched in June 2023. We included studies that described activities to train adult service users in the use of synchronous telehealth consultations. Articles were limited to those published in the English language. The review followed the Joanna Briggs Institute (JBI) guidelines for scoping reviews. The review is reported in line with the PRISMA-ScR guidelines. Titles and abstracts were screened by one reviewer. Full texts were screened by two reviewers. Data extraction was guided by the research question.
Results: The search identified 8087 unique publications. Thirteen studies met the inclusion criteria. All of the studies were published between 2020 and 2023. All studies were conducted in the United States of America (USA). The target populations included older adults (n = 7, 53.9%), patients in hospital outpatient settings (age unspecified) (n = 4, 30.8%), and adult patients (n = 2, 15.4%). Pre-telehealth visit one-on-one phone calls was the most common training format (n = 9, 69.2%). Other training formats included a Microsoft® PowerPoint® presentation (n = 1, 7.7%), a one-on-one video call (n = 1, 7.7%), a pre-recorded video (n = 1, 7.7%), and online modules (n = 1, 7.7%). Training was commonly facilitated primarily by student volunteers, and accompanied by written instructions. The training content included how to download and install software, troubleshooting, and adjusting device settings. Older adults were the most common target audience for the training. Overall, training was feasible and well-received by service users, and increased rates of video visits. There was limited evidence that it improved participants' competency with telehealth.
Conclusion: The review mapped the literature on training activities of service users in telehealth. There was limited and mixed evidence that training improved service users' perceived competency with telehealth. Key issues for consideration include the need to sustain one-on-one support and co-designed training. A wider focus on improving digital skills of service users should also be considered. There is a need for further studies to evaluate outcomes of telehealth training activities and studies across wider geographical settings.

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TESTING MACHINE LEARNING OUTCOMES OF ANTIDEPRESSANTS USE ON COGNITIVE FUNCTIONING IN OLDER PATIENTS IN LONG-TERM CARE FACILITIES

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Background: Older patients´ cognitive decline, particularly in long-term care, is a significant concern.
Aim: This study examines the impact of antidepressants on cognitive functioning in complex older patients residing in long-term care facilities (LTCF) by using machine learning (ML) methods.
Method: We conducted a retrospective ML study using a Dutch dataset Comprehensive Academic Search (CAS, n = 1250, 2014–2018) involving data of older patients from LTCF Collected by interRAI LTCF instrument in Netherlands. The analysis incorporated in total 41,610 assessments, outcomes were measured after 6 months´ and 12 months´ period and patients were categorized into two groups: users of antidepressants and non-users. Cognitive functions were assessed by using the Cognitive Performance Scale (CPS)[2]. Various ML models were employed in analyses and propensity score testing and ML-driven and clinically selected confounders were used during testing of ML models.
Results: The preliminary results indicate that patients who received antidepressants mildly improved in CPS (ATE = -0.04 in 6 months and ATE = -0.03 in 12 months) compared to those who did not receive the treatment. The ML bagging regression model demonstrated better performance than other models (with MAE of 0.34, MSE of 0.42 and R^2 of 0.865).
Conclusion: ML models might provide insights into the real outcomes of antidepressants use in complex older adults havingh multiple co-morbid conditions in the environment of multifactorial causes. The potential benefits of antidepressants use in mitigating cognitive deterioration in older patients must be further studied and preliminary ML models must be validated.

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PP127

IMPACT OF SOCIAL ENGAGEMENT ON COGNITIVE FUNCTIONS IN LONG-TERM CARE FACILITY RESIDENTS: A MACHINE LEARNING APPROACH

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Background: With aging of the population, mental health issues such as depression and cognitive decline have become critical concerns in LTCFs. Social engagement is considered an important strategy for prevention of cognitive impairment in older adults, yet its impact particularly within long-term care facilities (LTCFs) is underexplored.
Aim: This study investigates how machine learning models can be used to predict treatment effects on cognitive function outcomes based on social engagement levels in LTCF residents.
Method: Using a cohort of age 60 or older patients across multiple LTCFs, data was collected with interRAI instruments ver 9.0 in the period 2014–2018 were analyzed to determine outcomes over a 6-month and 12-month period. Data were used from the national Dutch Comprehensive Academic Search (CAS) database in the Netherlands (n = 48,142). Cognitive function was assessed with the Cognitive Performance Scale (CPS). Different machine learning algorithms were used (e.g. extra tree regressor, MLP regressor, decision tree regressor).
Results: Preliminary findings suggest a mild positive effect of social engagement on improved cognitive function.
Conclusion: This study underscores the importance of incorporating structured social activities into care plans for elderly patients in LTCFs in order to reduce cognitive decline and future drug burden with antidementia drugs. Further research is recommended to validate these findings.

Angevaare, MJ et al. "Social Activity and Cognitive Decline in Older Residents of Long-Term Care Facilities: A Cohort Study." *Journal of Alzheimer's disease: JAD* vol. 98,2 (2024): 433–443. https://doi.org/10.3233/JAD-221053

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PP128

EFFECT OF BEDSIDE SCANNING IN A CLOSED-LOOP SYSTEM ON MEDICATION ADMINISTRATION ERRORS

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Background: Bedside scanning (BSS) is a technology to reduce medication administration errors (MAEs). However, the evidence regarding the effectiveness of BSS is contradictory, especially if other technologies of a closed loop medication management system are already in use.
Aim: This study assesses the impact of BSS on MAEs within a closed loop medication management system, where other technologies are already implemented. The primary endpoint is the difference in prevalence of MAEs due to implementation of BSS. Furthermore, the difference in prevalence of the different types of MAEs was assessed.
Method: This before-and-after study was conducted in one surgical ward and one medical ward of a 981-bed general hospital in Belgium. Data was collected by direct observation of nursing staff administering medication. A medication administration error was defined as a deviation from the electronic prescription or generally applicable procedures. A logistic regression random effect model and a generalized estimating equation model were used to investigate the impact of BSS on medication administration errors.
Results: A total of 2.531 medication administrations were observed. Among the observations where the patient was correct, a total of 178 (4,40%) MAEs occurred pre-implementation and 129 (3,19%) MAEs post-implementation. The logistic regression random effects model showed a statistically significant reduction (p-value 0,0035) of MAEs with a correlation with the experience of the nursing staff within the institution. A higher effectiveness of BSS was observed among less years of experience. BSS tends to increase medication administration errors from 20 years of experience, however this was not statistically significant. The generalized estimating equation model showed a non-statistically significant reduction of MAEs. There was a reduction in absolute numbers of all types of medication administration errors, except omission.
Conclusion: Implementation of BSS reduces the rate of medication administration errors, even with other closed loop system technologies in use. This study found a correlation between the effectiveness of BSS and years of experience of the nursing staff, emphasizing the critical role of the end-users of this technology. Further research is needed identifying factors affecting the effectiveness of BSS.
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PP129

ANTICHOLINERGIC MEDICATION DEPRESCRIBING FOR REDUCING COGNITIVE DECLINE AMONG OLDER ADULTS: SYSTEMATIC REVIEW.

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Background: Several studies have identified an association between anticholinergic medications and cognitive impairment. Therefore, it has been postulated that the reduction of anticholinergic prescriptions could potentially decrease the future risk of cognitive impairment. To date, however, clinical benefit of minimizing the use of anticholinergics remains unconfirmed.
Aim: This systematic review aims to synthesize the evidence regarding the impact of anticholinergic deprescription on cognitive function, clinical global impression, activities of daily living and quality of life among older adults.
Method: Five multidisciplinary databases were electronically searched for published literature from inception to March 2022. Two independent reviewers carefully screened, selected, and extracted data based on the flowing prespecified eligibility criteria: randomized clinical trials involving individuals aged 50 years and above in which anticholinergic drugs prescription and burden was reduced. Then the risk of bias (RoB) of included studies was examined using the Cochrane RoB tool. Meta-analysis was not performed due to limited number of studies and heterogeneity, a narrative review approach was used instead.
Results: The systematic search identified three eligible studies which underwent RoB assessment. The overall RoB across all included RCTs was judged to be high. The assessment of individual domains and overall RoB are summarized in Fig. 1. The change in cognitive function across all included studies revealed minimal or no improvement using different scales (MMSE: MD: 0.39, 95% CI = − 0.96 to 1.75, trail- making and seven-minute screen (7MS) clock drawing test revealed no difference between both arms. The change in activities of daily living and quality of life were in favoring the intervention compared with the control arm (OR: 1.73, OR: 1.43, respectively). The change of the clinical global impression was not evaluated by any included studies.
Conclusion: Despite the growing body of evidence aiming to accurately determine the impact of anticholinergics on cognitive performance, the decision of whether anticholinergics deprescription should be recommended remains controversial. This is primarily attributable to the conflicting findings and to the poor methodological quality of available literature.

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PP130

AUDIT OF 'AS REQUIRED' PRESCRIPTION ORDER COMPLIANCE FOR ADULT INPATIENTS IN AN IRISH TEACHING HOSPITAL

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Background: Illegible and incomplete prescription orders can be a source of medication error for hospital inpatients. To improve patient safety, hospitals establish prescribing standards to define the required criteria of a legible and complete prescription order.
Aim: To evaluate the compliance of 'as required' prescription orders in an Irish teaching hospital against the hospital prescribing standard; Joint Commission International (JCI) Standard MMU 4.2.
Method: A clinical audit, in the form of a cross-sectional chart review, was conducted from September to November 2023. Fifty charts of inpatients aged ≥ 18 years were randomly selected from five wards. 'As required' prescription orders were analysed with the primary outcome measure being the level of compliance to the JCI Standard MMU 4.2 in terms of legibility and completeness criteria. A full Plan-Do-Study Act (PDSA) cycle was conducted. This included a brief targeted educational intervention; a presentation and prescribing

aid for prescribers. A reaudit of ten charts was performed three months post-intervention. Descriptive statistics were conducted.
Results: A total of 187 'as required' prescription orders were analysed. Of these, 177 (94.7%) were deemed legible, while only 25 (13.4%) were considered complete. Of the ten criteria for a 'complete' prescription order; three key areas of poor compliance were identified: the inclusion of 'time' (n = 80, 42.8%), 'maximum dose' (n = 28, 15%), and 'indication for use' (n = 43, 23%). Post-intervention, a reaudit of 42 'as required' prescription orders demonstrated improvements in legibility (+ 5.3%) and completeness (+ 24.7%). Notable improvements were observed in areas of previously identified poor compliance: 'time' (+ 19.1%), 'maximum dose' (+ 37.8%), and 'indication for use' (+ 34.1%). Overall, six criteria demonstrated improved compliance, one exhibited a slight decreased compliance (-1.9%), and three maintained optimal compliance of 100%.
Conclusion: These findings emphasise the importance of continued audit and education to optimise prescribing practices, ultimately enhancing patient care and safety outcomes. Given that compliance remains below the recommended 100%, further investigation into potential factors influencing compliance is warranted.

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CARDIOVASCULAR SAFETY IN PATIENTS TREATED WITH JANUS KINASE INHIBITORS.

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Background: Baricitinib, Tofacitinib and Upadacitinib are Janus kinase inhibitors (JAKis) indicated for the treatment of different chronic inflammatory diseases. They have been related to adverse cardiovascular events. For all these reasons, in certain population groups its use is recommended only when adequate therapeutic alternatives are not available.
Aim: To evaluate the cardiovascular risk associated with treatment with JAKis.
Method: Retrospective descriptive observational study of patients treated with JAKis from January 2018 to December 2023, both inclusive. Data were obtained from the ATHOS-PRISMA® outpatient dispensing program and by reviewing laboratory tests and medical records in Diraya®. The variables collected were: Age, sex, history of diabetes, hypertension or dyslipidemia before treatment and diabetes, hypertension or dyslipidemia after starting treatment with JAKis.
Results: 59 patients were included, 45 women (76.27%) and 14 men (23.73%), with a median age of 51 years. Of these, 24 were being treated with baricitinib, 21 with tofacitinib and 14 with upadacitinib. Of the 24 patients with baricitinib, 1 patient had a history of diabetes, 1 of hypertension, and 8 of hyperlipidemia. After treatment with baricitinib, 2 patients had diabetes, 1 had hypertension, and 16 had hyperlipidemia. Of the 21 patients with tofacitinib, 2 patients had a history of diabetes, 4 of hypertension, and 5 of hyperlipidemia. After treatment, 3 had diabetes, 4 had hypertension and 8 had hyperlipidemia. Of the 14 patients with upadacitinib, 3 patients had a history of diabetes, 1 of hypertension, and 7 of hyperlipidemia. After treatment, the number of patients with hyperlipidemia increased by a total of 10.
Conclusion: After treatment with JAKis, an increase in cardiovascular risk was seen since there was an increase in patients with diabetes and, to a greater extent, with hyperlipidemia. Furthermore, we can conclude that it is a class effect since this increase was observed with both baricitinib, tofacitinib and upadacitinib.

PP132

OPTIMIZATION OF PEMBROLIZUMAB AFTER IMPLEMENTATION OF PRESCRIPTION BY BODY WEIGHT

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Background: Oncological immunotherapy has represented a clinical revolution, although it has a high cost. Optimizing these costs is essential for the sustainability of public health systems.
Aim: To analyze the economic impact resulting from the implementation of a Pembrolizumab prescription program by body weight in a second level hospital.
Method: Retrospective descriptive study. The comparative consumption of Pembrolizumab was analyzed in patients with different types of tumors at two time intervals: during the year 2021 at a fixed dose of 200 mg vs 2023 at a dose of 2 mg per kilogram of body weight (2 mg/kg). The comparison was made using the difference in cost in absolute value and cost per patient. Data were obtained from the FARMIS-ONCOFARM® oncology mix management application and the PRISMA-APD® corporate application. The costs for each vial of Pembrolizumab 100 mg used were the over-the-counter prices (PVL) published by the Spanish ministry: 1.124,48 euros.
Results: During 2021, 246 administrations were carried out to 34 patients. The total consumption of Pembrolizumab was 492 vials. In 2023, 78 patients were treated with Pembrolizumab in 542 administrations with a total consumption of 710 vials. The cost in 2021 was 553.244 euros compared to 798.380 euros in 2023. The cost analysis per patient was 16.271 euros for 2021 and 10.235 euros for 2023.In absolute terms, the implementation of the prescription by body weight produced an economic saving of 329.473 euros.
Conclusion: The equivalence of effectiveness of Pembrolizumab when administered at a fixed dose vs body weight administration is published in numerous scientific studies. In this context, the implementation of the prescription by body weight of Pembrolizumab has produced significant economic savings without affecting its effectiveness.

PP133

ADVERSE REACTIONS ASSOCIATED WITH THE USE OF ONCOLOGICAL IMMUNOTHERAPY

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Background: Non-small cell lung cancer (NSCLC) represents 80% of lung cancer. It is subdivided into 3 types: adenocarcinoma, squamous cell carcinoma, and large cell carcinoma.
Aim: To evaluate the incidence of adverse reactions associated with the use of immunotherapy in cancer patients.
Method: descriptive retrospective observational study. Patients with non-small cell lung cancer without prior treatment with PDL1

expression greater than 50% and who began treatment with immunotherapy from January 2019 to December 2022 were included. The data was obtained from the FARMIS-ONCOFARM® programs, and from the review of medical records through the DIRAYA® corporate application. The drugs used were: Pembrolizumab 2 mg/kg (maximum dose 200 mg) every 21 days, Nivolumab 3 mg/kg (maximum dose 240 mg) every 14 days, or Atezolizumab 1200 mg every 21 days.
Results: A total of 32 patients (25 men and 7 women) were included. 25 patients received pembrolizumab, 5 patients received nivolumab, and 2 patients received atezolizumab. The adverse reactions with the highest prevalence registered, at the date of the study, were: pneumonitis (4), colitis (3), asthenia (3), erythema (2), herpes-zoster reactivation (2) and mucositis (2). The appearance of adverse reactions caused the temporary interruption of treatment in 9 patients, being the cause of definitive interruption in 4 cases (2 pneumonia, 1 neurological toxicity and 1 skin toxicity), resulting in death in 3 patients.
Conclusion: The new oncological treatments based on immunotherapy are not exempt from adverse reactions and can sometimes be a direct cause of death. An adequate identification and early management of these reactions is essential in a new clinical practice.

PP134

EFFECTIVENESS AND SAFETY OF OFATUMUMAB IN TREATMENT OF RECURRING MULTIPLE SCLEROSIS

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Background: Ofatumumab is a humanized anti-CD20 monoclonal antibody indicated for the treatment of Recurrent Multiple Sclerosis (RMS), which encompasses the forms of Relapsing Remitting Multiple Sclerosis (RRMS) and Secondary Progressive Multiple Sclerosis (SPMS). After three initial doses on days 1, 7 and 14, 20 mg are administered subcutaneously every 4 weeks.
Aim: To evaluate the effectiveness and safety of Ofatumumab in patients diagnosed with RMS.
Method: Retrospective descriptive and multicenter (3 hospitals) study that included patients diagnosed with RMS who started treatment with Ofatumumab between May-2023 and April-2024. Data were obtained from the medical history and the hospital prescribing-dispensing program. The variables collected were: diagnosis, time of evolution, number of doses administered and previous treatments. Effectiveness was evaluated using the Expande Disability Status Scale (EDSS) score at baseline, 3 and 6 months; as well as by the number of annual outbreaks before and after the start of treatment. Safety was assessed by the occurrence of adverse events (AEs).
Results: 48 patients (65% women) with a mean age of 47 ± 12 years were included. 72.91% were diagnosed with RRMS, while 27.08% with SPMS. 82.60% of the patients had received previous treatments, while 17.40% were naive patients. The previous treatments were, in order of frequency: Interferon beta-1a (31.57%), Teriflunomide (28.94%), Siponimod (26.31%), Natalizumab (23.68), Fingolimod (21.05%) and Ocrelizumab (17.42%). Since initiation of Ofatumumab, patients had received a mean of 9 ± 4 doses. In terms of effectiveness, the median outbreaks patients had suffered in the year prior to starting Ofatumumab was 1 (0–2), which was reduced to 0 (0–1) since starting the treatment (only 1 patient suffered outbreak after treatment with Ofatumumab). The baseline EDSS score was 4.0 ± 2.5, while after treatment it was 3.5 ± 2.5 at 3 and 6 months, without variation. With respect to safety, 41.30% of patients suffered AEs, mainly: flu-like syndrome (42.10%), fever (26.31%), myalgia (10.52%) and digestive discomfort (5.26%). 1 patient abandoned treatment due to AE.
Conclusion: Our experience shows that Ofatumumab is an effective drug in the treatment of RMS in patients with failure to other disease-modifying treatments, or as a first line in patients with a rapid and aggressive course of the disease and/or poor prognostic factors. Furthermore, its use is safe with a manageable EA profile.
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PP135

OFF-LABEL USE OF TOPICAL INSULIN TO TREAT PERSISTENT CORNEAL ULCERS

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Background: Corneal ulcers are a defect in the surface epithelium of the cornea that involves the underlying stroma. Insulin is a growth factor that can promote corneal epithelial cell proliferation and migration as well as inhibit corneal epithelial cell apoptosis. However, clinical experience with topical insulin in patients with nonhealing corneal wounds is minimal.
Aim: The objective of this study was to describe the effectiveness and safety of insulin 1 IU/mL eye drops treatment for persistent corneal ulcers (PCU).
Method: Retrospective descriptive study that included patients who started insulin 1 IU/mL eye drops treatment for PCU between February 2023-April 2024. Data were obtained from the electronic medical history. The variables collected were: patient demographics, PCU etiology, treatment duration, line of treatment, dosage regimen, clinical response and adverse effects (EAs). Effectiveness was evaluated considering total reepithelialization (RT) if the corneal defects completely disappeared, partial reepithelialization (PR) if the lesions decreased but there was no complete elimination, and no response (NR) if the lesions remained. Safety was assessed through EAs.
Results: 6 patients were treated with insulin 1 UI/mL eye drops for PCU. The median age was 68 (38–90) years. A total of 66.7% (n = 4) were women. Administration frequency was one drop four times a day for all patients. The PCU etiologies were: 50.0% (n = 3) neurotrophic, 16.7% (n = 1) posterior vitreous detachment, 16.7% (n = 1) herpetic keratitis and 16.7% (n = 1) dry eye. A total of 50.0% (n = 3) were treated in the fifth or successive lines, 33.3% (n = 2) in the fourth and 16.7% (n = 1) in the third. 50.0% (n = 3) and 16.7% (n = 1) patients previously received autologous serum or cyclosporine eye drops, respectively. The median duration of treatment with insulin 1 UI/mL eye drops was 1.5 (1–4) months. No patients achieved RT, 50.0% (n = 3) presented RP and 50.0% (n = 3) NR. Regarding EAs, 33.3% (n = 2) presented eye irritation, 16.7% (n = 1) blurry vision, 16.7% (n = 1) dry eye and 16.7% (n = 1) mild facial edema.
Conclusion: In our experience, off-label use of insulin 1 IU/mL eye drops formulation appears to be a mildly effective treatment option for patients with PCU, with a manageable EA profile. However, due to sample size further studies are needed to confirm these findings.
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PP136

EFFECTIVENESS AND SAFETY OF ATEZOLIZUMAB ASSOCIATED WITH CHEMOTHERAPY IN FIRST LINE OF SMALL CELL LUNG CANCER

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Background: Small cell lung cancer (SCLC) accounts for 15% of lung cancer. It has a low response to chemotherapy treatment and a poor prognosis.
Aim: To analyze the effectiveness and safety of atezolizumab associated with chemotherapy in SCLC.
Method: Retrospective observational study. Patients with CPM not previously treated for metastatic disease who initiated treatment with atezolizumab associated with carboplatin and etoposide every 21 days for 4 cycles, and subsequently maintenance with atezolizumab every 21 days, until December 2023 inclusive, were included. Treatment was prolonged until disease progression or unacceptable toxicity. The data were obtained from the FARMIS-ONCOFARM® and DIRAYA® applications. Effectiveness was evaluated by calculating PFS and OS. Safety was assessed by recorded adverse events and dose reductions made. Other variables collected were: sex, age, ECOG and previous treatments.
Results: 14 patients were included, 4 women and 10 men, with a mean age of 67 years. Patients had a median ECOG 1 at the start of treatment. Four patients had received radiotherapy prior to the start of treatment. At the date of the study, 10 patients had progressed and 9 of them had died. The median PFS obtained was 3 months. Patients who continued active treatment without progression accumulated a median of 5 treatment cycles. The OS obtained was 6 months. The adverse reactions recorded were in order of prevalence from highest to lowest: anemia (3), respiratory failure (3), neutropenia (2), mucositis (1), liver failure (1) and one case of pancytopenia that was the cause of death. Another patient required reduction of etoposide due to liver failure.
Conclusion: The results obtained for atezolizumab associated with chemotherapy in our study are considerably lower than those obtained in the pivotal IMPOWER 133 trial in terms of PFS (3 vs 5.2 months) and OS (6 vs 12.3 months), respectively. The adverse reaction profile is similar to that obtained in the pivotal trial.

PP137

ADHERENCE OF CENTRAL NERVOUS SYSTEM CANCER PATIENTS ENROLLED IN A CLINICAL TRIAL

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Background: Adherence to clinical trial treatments in patients diagnosed with a nervous system tumour is critical to improving health outcomes and advancing medical research. Adherence to treatment protocol helps researchers collect accurate data and evaluate the efficacy of new therapies. In addition, proper adherence can increase the chances of treatment success.
Aim: To analyse the adherence of patients with a nervous system tumour enrolled in a clinical trial (CT).
Method: Patient adherence was analysed from September 2023 to February 2024. The variables to be collected included: age, language, complex trial protocol, polypharmacy, number of drugs in the CT, comorbidities, history of clinical trials and adherence. Patients were contacted in cycle 2 of their treatment, considering this to be the time of greatest uncertainty in CT. Adherence was measured using the Morisky-Green test and subsequently recorded by the Pharmacy Service. The contact was used to resolve doubts and patient satisfaction. The project complied with the data minimisation law and the European regulation 2016/679 on personal data protection.
Results: Twenty-seven patients were included in the study. 84.6% were aged between 50 and 65 years (mean 60.9 years). The main comorbidities were those related to the cardiovascular profile (18.9%) and mental health (12.4%). Regarding communication with the patient, 94.5% of the patients spoke Spanish. 81.2% of the patients had polypharmacy, of which 31.5% had several investigational drugs. Sixty-four percent of patients were included in a clinical trial with daily drug administration. The mean adherence described by patients during telephone contact was high (97.7%), while that obtained by physical medication accounting was 91.2%. The main reasons for non-adherence were: forgetfulness of administration and adverse drug reaction. 39.5% reported using a method to remember their medication, with a mobile phone alarm (90.1%) being the most used tool. In addition, contact with the patient was used to clarify doubts about the medication on 42.5% of occasions. The main queries were related to possible drug interactions and adverse drug reactions.
Conclusion: The patient with a nervous system tumour included in a clinical trial has a high adherence to medication due to the high investment of time and personnel involved, including the Hospital Pharmacy team.

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PP138

QUANTITATIVE ASSESSMENT OF DIRECT ORAL ANTICOAGULANT ADHERENCE USING THE PROPORTION OF DAYS COVERED METHOD

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Background: Non-adherence to direct oral anticoagulant (DOAC) therapy in patients with atrial fibrillation and flatter (AFF) can compromise treatment effectiveness, increasing the risk of stroke and other complications. Evaluation of non-adherence is essential to optimize treatment and minimize the risk of negative outcomes.
Aim: This study aimed to assess DOAC therapy adherence among patients with AFF based on data from the National Health Service's reimbursement prescriptions database.

Method: A retrospective study was conducted using the prescriptions database from January 2012 to December 2022. The investigation included prescriptions with diagnoses of atrial fibrillation and flutter. Adherence was calculated for patients with at least two DOAC prescriptions, including rivaroxaban, dabigatran, edoxaban, or apixaban. The Proportion of Days Covered method was used to evaluate medication adherence by calculating the proportion of days in a given period that a patient has access to their prescribed medication. Higher PDC values signify higher medication adherence. The optimal adherence level was defined as 80% or higher.
Results: Adherence to DOAC therapy was evaluated in 45,933 patients with an average age of 75.0 years (SD = 9.6). Of these patients, 27,355 (59.6%) were female. Overall adherence was 69.4%, with respective adherence rates of 70.7% for rivaroxaban, 69.4% for dabigatran, 64.5% for edoxaban, and 45.8% for apixaban. Only 44.2% of patients maintained adherence levels above 80%. Significant changes in adherence were noted when patients switched between different DOACs ($p < 0.001$), but adherence levels for each specific drug remained consistent among those who switched ($p = 0.577$).
Conclusion: Adherence to DOAC therapy was considered low because less than half of the patients achieved optimal adherence levels. These findings underscore the need for tailored interventions to improve patient adherence.

PP139

EFFECTIVENESS OF PCSK9 INHIBITOR TREATMENT IN VERY-HIGH CARDIOVASCULAR RISK PATIENTS

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Background: The European Society of Cardiology guidelines stipulate a stringent LDLC target of < 1.4 mmol/L for individuals classified as very high risk. In instances where the therapeutic objective remains unattainable despite maximal statin and ezetimibe dosages, incorporating protein convertase subtilisin-kexin type 9 (PCSK9) inhibitors is recommended as an adjunctive therapeutic strategy.
Aim: This study aimed to assess the long-term changes in LDLC levels among patients starting alirocumab therapy.
Method: The observational retrospective study was carried out from September 2023 to February 2024. The cohort comprised patients for whom alirocumab was prescribed having LDLC levels beyond 3.0 mmol/L despite undergoing statin and/or ezetimibe therapy at the highest tolerable dosage for a period longer than 3 months. Blood test results were collected at 1, 3, 6, and 12 months from PCSK9 inhibitor therapy initiation.
Results: Thirty-six patients were enrolled in the study, with 36.1% being women and 63.9% exhibiting statin intolerance. The cohort had an average LDLC level of 4.28 mmol/L before PCSK9 initiation. Out of 36 patients, 15 reached the target LDLC level with a mean value of 1.88 mmol/L and 1.91 mmol/L after one month and three months. The proportion of patients achieving the target using mono, dual and triple therapy was 18.2% vs 41.7% vs 66.8% after one month and 9.1% vs 58.3% vs 53.9% after three months, respectively. After 6 months, 11 of 17 observed patients achieved the target LDLC level, with a mean value of 1.57 mmol/L. After 12 months, only 2 out of the observed 7 patients reached the target LDLC level, with a mean value of 2.27 mmol/L. No difference in the number of patients achieving LDLC level targets was observed during all time points receiving mono, dual or triple therapy ($p > 0.050$). Nevertheless, the mean LDLC values significantly decreased ($p = 0.008$). No adverse effects were reported by any patient.
Conclusion: Initiating alirocumab therapy, the mean values of LDLC significantly decreased. Nevertheless, results showed varying degrees of success in meeting the LDLC target across different therapy combinations and time points, suggesting that individual responses may differ depending on various factors.

PP140

NUTRITIONAL STATUS, MUSCLE STRENGTH AND THE EFFECTIVENESS OF INHALER USE IN PATIENTS WITH ASTHMA

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Background: The GINA guidelines place great emphasize on the importance of the individualized choice of device that should take into account patient abilities. Some asthma patients have limited activity of the inspiratory muscles that may depend on the course and control of asthma, as well as other factors, including physical activity and nutritional status.
Aim: To analyze the effects of nutritional status, muscle strength, physical activity and breathing exercises on the effectiveness of inhaler use and asthma control.
Method: Setting: the Department of Allergology and Clinical Immunology, the University Clinical Center of the Medical University of Warsaw. Inclusion criteria: $\geq$ 18 years of age, asthma and inhaler use. Thirty asthma patients treated with daily used inhalers participated in the study (March 23rd—April 25th, 2023). Asthma control was assessed using the ACT^{TM} test. Nutritional status was assessed with the use of the Mini Nutritional Assessment (MNA) questionnaire. The patients had their body composition, BMI, skeletal and respiratory muscle strength measured, and their inhaler use, inspiratory flow and the place of medication deposition in the respiratory tract were assessed. The Bioethics Committee consent no.: KB/130/2022. Funding: student mini-grant no. FW7/1/F/MG/N/22.
Results: Study participants were overall in good condition, with normal nutritional status according to MNA (90%), declared physical activity (73%), while more than half were overweight or obese. Inhaler use was in general not effective. There was observed no significant impact of nutritional status, body composition, physical activity and muscle strength, including respiratory muscles, on the effectiveness of inhaler use and disease control. The correct value of inspiratory flow and the type of inhaler affected the effectiveness of inhalation (optimal medication deposition in the respiratory tract).
Conclusion: Overall, the choice of inhalers were appropriate to patient abilities, while the inhaler use was not effective. The measurement of inspiratory flow should be taken into account when selecting the inhaler and for inhaler technique coaching. There was no statistically significant impact of the other parameters examined (nutrition, body composition, physical activity and muscle strength) on the effectiveness of inhalation. However, the observed correlations indicate that the study is worth continuing on a wider and more diversified group of patients.

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PP141

NURSES' PERCEPTIONS OF MEDICATION ADMINISTRATION ERRORS—REPORTING AND BARRIERS. IS THERE A ROLE FOR THE CLINICAL PHARMACIST?

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Background: High quality, effective and safe healthcare is a priority for healthcare systems. Medication administration errors (MAEs) are a common error in nursing practice. The reporting and identification of the causes of MAEs should be linked to nursing education in the prevention of MAEs, emphasising the role of clinical pharmacists.
Aim: The aim of this study was to identify the reasons for MAEs and describe the barriers to their reporting.
Method: A monocentric anonymous questionnaire survey was conducted using the CAWI (Computer Assisted Web Interviewing) method. The modified MAE Questionnaire, with the kind permission of its author, B. Wakefield (USA), was used in conjunction with the survey, along with sociodemographic data of respondents. The survey was conducted in December 2023 and January 2024. The descriptive statistics was used to analyse the data. The most prevalent reasons for MAEs were identified, as well as the barriers to their non-reporting. The average and standard deviation of responses on a Likert scale (1 = strongly agree, 5 = strongly disagree) and the median and mode were calculated.
Results: The survey was completed by 139 respondents (92.8% female), with the majority belonging to the 45–54 age group (n = 52, 37.4%) and having accumulated 16–35 years of nursing experience (n = 72, 51.8%). A total of 67 respondents indicated that they had specialised in any nursing field (48.2%). Most respondents were from surgical departments (n = 73, 52.5%). Among the most frequent causes of MAEs were the substitution of brand drugs by cheaper generics (2.09 ± 1.10; median 2, mode 1), verbal orders being used instead of written orders (2.69 ± 1.37; median 2, mode 2), and name similarity between different drugs (2.76 ± 1.19; median 3, mode 2). It is evident that not all MAEs are reported by nurses. Sixteen nurses (11.5%) stated that they do not report any MAEs, while 88 (63.3%) reported the MAEs to their supervisors. The reasons for non-reporting of MAEs include the lack of a clearly defined definition of a medication error (2.83 ± 1.03; median 3, mode 3), the error being deemed important enough to be reported (2.91 ± 1.18; median 3, mode 3), and the overemphasis placed on MAEs as a measure of the quality of nursing care provided (2.92 ± 1.15; median 3, mode 3).
Conclusion: Based on results, the education of nurses will be developed and led in cooperation with and by a clinical pharmacist. This approach will emphasise the importance of the quality of health care provided, including monitoring for MAEs, for patient safety, the effectiveness of patient treatment, the quality of the health care facility, and the saving of staffing and financial resources associated with medication errors.

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PP142

PREVALENCE AND THE NATURE OF PHARMACIST INTERVENTIONS IN COMMUNITY PHARMACIES IN CROATIA: A CROSS-SECTIONAL STUDY

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Background: An essential aspect of pharmaceutical care is addressing drug-related problems. Community pharmacists are at the forefront of identifying these issues and frequently intervening. However, their actions often go undocumented and unrecognized by the healthcare system.
Aim: The aim of this study was to explore the nature of pharmacists' interventions in everyday work settings in community pharmacies in Croatia.
Method: This cross-sectional observational study among community pharmacists in Croatia utilized an online survey with two questionnaires: one for general information about the pharmacists and their pharmacies, and another based on the PCNE V9.1 classification to document drug-related problems and subsequent interventions. Participants recorded all interventions over three consecutive days or indicated if none were performed. Data were analyzed using descriptive statistics with IBM SPSS.
Results: A total of 152 interventions were conducted by 71 pharmacists, with an average of 2.14 (± 1.70) interventions over three days, ranging from 0 to 7. Most participants (53.5%) performed 1 or 2 interventions, with a median duration of approximately 6 min. The most common interventions were conducted through patients or caregivers (94.1%), followed by interventions involving changes to the drug or its usage (84.2%), and interventions through prescribers or doctors (39.5%). Interventions often occurred on multiple levels. Interventions involving prescribers/doctors were more time-consuming and had a higher rate of completely resolved drug-related problems (83.3%) compared to those that did not involve prescribers/doctors (52.2%). Overall, 64.5% of the interventions led to completely resolved drug-related problems, 90.8% were accepted, and all but one were rated as valid.
Conclusion: This research demonstrated that community pharmacists regularly conduct interventions, contributing to the resolution and prevention of drug-related problems and ensuring safe and effective drug therapy. Effective communication with prescribers is crucial for successfully addressing these issues. The high percentage of valid and accepted interventions suggests that pharmacists possess the necessary skills to provide pharmaceutical care.

PP143

PRESCRIPTION PATTERNS OF ANALGESIC DRUGS IN THE MANAGEMENT OF PAIN AMONG PALLIATIVE CARE PATIENTS

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Background: According to the World Health Organization (WHO) Global Atlas of Palliative Care, an estimated global number of over 19 million adults require palliative care at the end of life.[1] Pain can have a devastating impact on a patient's quality of life. Adequate assessment and management of pain is therefore a major challenge in palliative care.[2]
Aim: The purpose of this study was to describe the use of analgesics in the palliative care service.
Method: The study is a single-center and retrospective study carried out between December 2022 and May 2023 at the Palliative Care Service in Pursaklar State Hospital. Data were collected from patients' electronic medical records The data was then presented descriptively using graphs and tables.
Results: 102 patients were admitted to the palliative care service during the study period.Among these, 59 patients who received pain treatment files were assessed. Mean age of the patients was determined to be 70.4 years.Of these patients, thirty-one were female (52.6%), with the majority being admitted to the palliative care service from the anesthesia clinic (45.8%), followed by the emergency department and intensive care services. Primary reason for admission was cerebrovascular diseases (66.1%),followed by malignancy. The mean length of stay (LOS) was 61.8 days, and the mortality and discharge rates were equal (38.9%).In 58.3% of the patients receiving analgesics, their Visual Analog Scale (VAS) scores were recorded as 0. Among the 1,969 prescriptions evaluated,69.1% (1,361) contained non-opioid analgesics and acetaminophen was the most frequently prescribed drug at 56%. Furthermore, 24.5% of the prescriptions contained opioid analgesics, with tramadol being the most frequently prescribed narcotic analgesic 70% (341), followed by fentanyl and morphine.
Conclusion: This study shows that the frequency of analgesic use is high in palliative care patients, a diverse group who experience pain for various reasons. It is important to assess pain carefully and repeatedly to ensure appropriate analgesia.

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TURKISH TRANSLATION AND CULTURAL ADAPTATION OF THE ORIGINAL ABC TAXONOMY FOR MEDICATION ADHERENCE: PRELIMINARY FINDINGS

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Background: Adherence was initially used to describe patient behavior; however, its definition has been changed over time. Ascertaining Barriers to Compliance (ABC) taxonomy (1) has been developed in 2012 by International Society for Medication Adherence (ESPACOMP) to avoid conceptual confusion and increase the comparability and reproducibility of studies (2).
Aim: To develop a Turkish-translated version of the ABC taxonomy, including its cross-cultural adaptation.
Method: Firstly, a systematic review was conducted to determine Turkish terms and definitions related to adherence in terms of developing a Turkish version of ABC taxonomy and selecting relevant Turkish panellists. After that, an online Delphi survey was conducted. Levels of consensus were moderate consensus (if 50–75% of panellists accepted), consensus (if > 75–95%) and strong consensus (if > 95% of panellists accepted).
Results: In the systematic review, 187 panellists who published studies on medication adherence were identified. In the first round of Delphi study, 39 (20.9%) of them were participated. These participants were pharmacists (n = 22), nurses (n = 11), physicians (n = 3), psychologists (n = 2) and a health sciences expert. The mean ± standard deviation of the age of the panellists was 40.6 ± 10.1 years and most of them were female (87.2%). Only moderate consensus was obtained for term of 'adherence to medication'. Moderate consensus was achieved on most of the definitions (including adherence to medication, initiation, implementation, persistence, adherence management and adherence-related science).
Conclusion: After completing all Delphi rounds, the findings of the study could be useful in education, practice and research on medication adherence-related science.

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FACTORS INFLUENCING MEDICATION ADHERENCE AMONG OLDER IRISH ADULTS WITH ANXIETY OR DEPRESSION: A CROSS-SECTIONAL STUDY

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Background: Medication adherence is essential for achieving optimal treatment outcomes in managing depressive and anxiety disorders.
Aim: The aim of this study is to assess levels of medication adherence in these patient cohorts and investigate the factors which may influence medication adherence.
Method: This study is a secondary analysis with a cross-sectional design of data from the Mitchelstown Cohort Re-Screen (MCR) Study 2015. Participants were included if they had a diagnosis of anxiety or depression. The Morisky Medication Adherence Scale 8 was used to measure medication adherence. A score of 8 means that a patient is fully adherent to their medication regime while a score less than 6 indicates non-adherence. Descriptive statistics, univariable, binary logistic regression and multivariable multinomial logistic regression models were conducted.
Results: Out of 1378 participants in the MCR, 145 were living with depression and 159 with anxiety. The mean age of those with depression or anxiety was 65.28 (SD 5.4) years, and 49.35% of participants were female. Of those with depression 17.24% (n = 25) of were non-adherent (MMAS < 6) compared with 9.94% (n = 136) of those in the MCR not suffering from depression or anxiety. Having depression was associated with decreased medication adherence (OR = 1.755, 95%CI = 1.182–2.607), whilst no significant association was found between anxiety and adherence (OR = 1.296, 95%CI = 0.614–2.372). Socio-economic factors showed no significance in multivariable models.
Conclusion: Lower levels of medication adherence in those living with depression were reported which aligns with other studies conducted on this matter. Thus, specific interventions to optimise adherence in this cohort should be considered.
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BARRIERS AND FACILITATORS TO MEDICATION MANAGEMENT POST-MYOCARDIAL INFARCTION: A QUALITATIVE SYSTEMATIC REVIEW

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Background: Cardiovascular diseases are the leading cause of death globally[1], with over three million people experiencing ST-Segment Elevation Myocardial Infarction[2]. International guidelines recommend the use of at least five medications post-myocardial infarction (MI). Adherence to these medications is essential to prevent further morbidity.
Aim: The aim of this qualitative systematic review is to cohere the literature on the challenges faced by people who survive MI and their families/caregivers regarding medication adherence. Outcomes of interest: Describe the facilitators and barriers experienced by patients and their carers related to medication-taking post-MI.
Method: A qualitative systematic review was conducted. Embase, SCOPUS, CINAHL, PubMed, and Web of Science were searched from inception through April 2023. Inclusion criteria were articles focused on patients discharged from acute care settings post-MI to home setting, patients $\geq$ 18 years old and carers/family members of patients who satisfy these criteria. Following the PRISMA checklist only interviews/focus groups and quantitative studies with qualitative data were considered. Theoretical domains framework (TDF) was used for data analysis.The Joanna Briggs Institute Critical Appraisal tool for qualitative research was used to assess the quality of the studies.
Results: Out of 12,012 initial citations, 15 studies were included from eight different countries: the United Kingdom (n = 4); Sweden (n = 3); Canada (n = 2) and the United States of America (n = 2); Indonesia (n = 1); Iran (n = 1); Norway (n = 1) and Northern Israel (n = 1). Twenty-five spouses and 533 patients post-MI were interviewed. The most common facilitator that emerged from the TDF was beliefs about consequences. Lack of knowledge, and environmental context and resources were the most common barriers. Other domains served as both barriers and facilitators; for example, some patients mentioned the social influences domain as a facilitator, whilst for other patients, this acted as a barrier and added more pressure.
Conclusion: This is the first systematic review, to our knowledge, to provide a synthesis of qualitative studies that identify barriers and facilitators for medication adherence post-myocardial infarction. Myocardial infarction patients face multiple barriers that affect their medication adherence post-hospital discharge. Professional/Social role and identity seem to be promising for interventions aimed at enhancing adherence.

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PP149

MANAGEMENT OF HIGH-DOSE METHOTREXATE THERAPY FOR PRIMARY CENTRAL NERVOUS SYSTEM LYMPHOMA BY PHARMACISTS

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Background: High-dose Methotrexate (HD-MTX) is the standard induction chemotherapy for newly diagnosed primary central nervous system lymphoma (PCNSL), known for its poor prognosis. However, HD-MTX poses inherent toxicity, risks leading to significant safety concerns and financial burdens for patients, impacting PCNSL care and necessitating an optimal management method.
Aim: In this study, we conducted a retrospective analysis of patients who were newly diagnosed with PCNSL and underwent treatment with HD-MTX. This study highlights the essential role of clinical pharmacists in standardized managing HD-MTX-induced toxicity

through therapeutic drug monitoring (TDM) and pharmacogenetic testing.
Method: Patients who were newly diagnosed with PCNSL and underwent treatment with HD-MTX were managed following a standardized protocol involving clinical pharmacists. The protocol comprised pre-treatment evaluation, medication therapy review, pharmacotherapy management, established dosing regimens, medication dispensing, and proactive toxicity management, with MTHFR gene testing and TDM of MTX as key components. The primary outcome measures focus on evaluating clinical manifestations and the effectiveness of individualized management strategies to mitigate HD-MTX-induced adverse effects.
Results: A total of 18 patients were enrolled from January to December 2023 for the study. Of these, eleven (61.1%) were male with a median age of 64 years (ranging from 49 to 83 years). The median hospital stay was 9 days (ranging from 4 to 29 days). Six (33.3%) patients required the use of antibiotics. Notably, severe MTX toxicity was detected in one patient (5.56%), as revealed by TDM. This patient had a TT genotype at the MTHFR 677C > T locus, which is associated with reduced MTHFR activity and a heightened risk of HD-MTX toxicity. The patient's clinical symptoms included severe oral and pharyngeal pain with ulcers, liver enzyme abnormalities, and grade IV bone marrow suppression. A pharmacist-led detoxification protocol was implemented, involving aggressive hydration, alkalization, diuresis, and intravenous calcium folinate, which was adjusted based on TDM results for MTX. All patients (100%) recovered and was discharged successfully, underscoring the essential role of pharmacists.
Conclusion: Limited reports illustrate the involvement of clinical pharmacists in identifying and managing toxicity during HD-MTX therapy for PCNSL. By integrating pharmacogenetic testing and TDM, clinical pharmacists have crafted a standardized pharmacovigilance protocol that reinforces medication safety and efficacy. Their collaborative efforts with physicians are crucial in managing complex chemotherapy-related complications, markedly improving outcomes for patients, particularly those with genetic predispositions.

PP150

PSYCHOMETRIC EVALUATION OF A KURDISH VERSION OF MARS SCALE AND BMQ QUESTIONNAIRE IN PATIENTS WITH CARDIOMETABOLIC CONDITIONS

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Background: Validated tools to measure treatment adherence are missing for Kurdish Iraqi speakers, hindering research to improve medication use in this group. Poor adherence is linked to worse health outcomes and higher healthcare costs.
Aim: This study aimed to evaluate the psychometric properties of the Kurdish versions of the Medication Adherence Report Scale (MARS-5) and specific domains (necessity and concern domains) of the Beliefs About Medication Questionnaire (BMQ) among patients with cardiometabolic conditions.
Method: In this cross-sectional study, patients with cardiometabolic conditions undergoing treatment for at least a year at various medical centers in Erbil, Iraq, from February to July 2023 were included. Translation and cultural adaptation of two tools: MARS-5 and specific domains (necessity and concern domains) of BMQ were done. principal component analysis, analysis of internal consistency, test–retest reliability, and concurrent validity (including correlation analysis between clinical indicators (including blood pressure, HbA1C, and lipid profiles), and the score of MARS-5) were performed.
Results: Among 407 patients, almost half of participants (52%) were female with a median age of 60 (ranging from 25 to 88 years). Principal component analysis confirmed one component for MARS-5, and two components (Specific-Necessity and Specific-Concern) for BMQ. Cronbach's alpha values were 0.87 for the MARS-5 and 0.91 and 0.89 for the necessity and concern domains of BMQ, respectively. The intraclass correlation coefficients ranged from 0.84 and 0.95 for both tools at baseline and after two weeks. There were significant correlations between the score of MARS-5 and HbA1c levels (rho: -0.45, $p < 0.001$) and blood pressure levels (rho: -0.21 for systolic blood pressure, $p < 0.001$ and -0.17 for diastolic blood pressure, $p < 0.05$).
Conclusion: The Kurdish versions of MARS-5 and BMQ-specific domains (necessity and concern domains) exhibit adequate reliability and validity supporting their use for assessing medication adherence and beliefs about medication in Kurdish-speaking populations.
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PREVALENCE OF ADHERENCE TO GUIDELINE FOR SECONDARY PREVENTION OF CARDIOVASCULAR DISEASE: A SYSTEMATIC REVIEW

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Background: Clinical guidelines recommend antiplatelet, beta blocker, ACEI, and lipid lower medications in patients with prior coronary artery disease (CAD) for secondary prevention. While the benefit was proven in previous studies, the implementation in clinical practice appeared heterogenous.
Aim: To identify the overall and drug class-specific prescription prevalence for secondary prevention among CAD patients.
Method: Studies were identified through searching of Medline database. We included observational studies that reported medications used in hospital discharge after acute coronary event and primary care settings in patients with coronary heart disease. The review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) statement.
Results: Fifteen studies were covering a total of 396,763 patients. Records from those studies are based on clinical dataset, hospital or primary care-based record. The percentage for patients received all four drug classes ranged from 44.0 to 88.0%. The utilisation of antiplatelet and ACEI was particularly varied, range 31.0–98.5% and 42.0–90.0% respectively, whereas lipid lowering medications use was 68.2–94.5% and beta blocker 62.0–94.0%.
Conclusion: Prescription practice for secondary prevention in CAD patients varied. Further studies are required whether these are due to contraindications or suboptimal clinical practice.

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A DESCRIPTIVE ANALYSIS OF DRUG-DRUG INTERACTIONS AND ADVERSE DRUG REACTIONS IN MULTIMORBID OLDER INPATIENTS

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Background: Drug-drug interactions (DDIs) are prevalent in multimorbid and polymedicated older adults. DDIs can increase the risk of adverse drug reactions (ADRs), hospital admissions, and mortality.[1] In relation to DDI identification, a list of 66 DDIs, validated by an expert Delphi-panel as particularly relevant in older adults, was published in 2021.[2].
Aim: The main objectives of the present study is to (i) describe the incidence and prevalence of 66 clinically relevant DDIs and (ii) analyse the occurrence of 12 corresponding predefined ADRs in older inpatients enrolled in the SENATOR (Software ENgine for the Assessment and optimization of drug and non-drug Therapy in Older peRsons) trial.
Method: The sub-study of the SENATOR trial involves 1537 European multimorbid older inpatients ($\geq$ 3 active comorbidities, and $\geq$ 65 years old) recruited between July 2016 to February 2018 in six academic teaching hospitals (Belgium, Iceland, Ireland, Italy, Scotland, and Spain). Descriptive analysis determined DDI, and ADR prevalence/incidence based on the list of 66 potentially clinically significant DDIs and a predefined ADR list. Researchers grouped DDIs that could be causal for one of the prespecified ADRs based on information regarding the mechanism, potential harm, and management of the 66 DDIs provided in the consensus list by Anrys et al.[2].
Results: At baseline (median age: 78 [72,84], 52.8% male, number of daily drugs taken: 9 [7,11]), the prevalence of patients with DDIs was high (50.9%), increased during hospitalisation (55.2%) and reduced to 49.7% after 12 weeks. The most common DDIs were: concomitant prescription of $\geq$ 2 drugs that reduce potassium (17.1%), concomitant use of $\geq$ 3 centrally-acting drugs (9.1%), and SSRI + loop or thiazide diuretic (7.3%). Approximately one-third of the included population experienced a prevalent (36.6%) and/or an incident (35.8%) ADRs. Major serum electrolyte disturbance was the most common incident (10.7%) and prevalent (11.5%) ADR. The number of patients with incident ADRs was significantly higher for patients with DDIs compared to patients without DDIs (38.6% vs 32.4%, p = 0.013). A higher prevalence of new onset falls (10.4% vs 6.2%, p = 0.013), major constipation (5.1% vs 2.0%, p = 0.004), and significant serum electrolyte disturbances (14.7% vs 9.9%, p = 0.006) was observed in patients with related and thus potentially causal DDIs.
Conclusion: Clinicians should, especially in older multimorbid inpatients, be aware of DDIs and the involved drug classes that can lead to an increased rate of ADRs. Regularly reevaluating the appropriateness of the frequently involved drug classes and initiating deprescribing when necessary is recommended.

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POTENTIAL DRUG-DRUG INTERACTIONS AT HOSPITAL ADMISSION IN PATIENTS WITH CARDIOVASCULAR DISEASES

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Background: Cardiovascular diseases (CVDs) are the leading cause of mortality and morbidity. Patients diagnosed with CVD tend to have a significant number of drugs which increase the risk of drug-drug interactions (DDIs). DDIs can complicate course of treatment and cause negative outcomes. Hospital admission is a critical point for determining and preventing DDIs.
Aim: The aim of this study is to determine the type and prevalence of potential clinically significant DDIs in patients with CVD and to determine risk factors associated with exposure to DDIs.
Method: A prospective study was conducted at the Dubrava University Hospital at the Department of Cardiovascular Medicine during a 6-month period. Demographic, clinical and pharmacotherapy data were collected. The first prescribed pharmacotherapy was analyzed. The research was approved by the Hospital's Ethics Committee and patients involved in the study signed an informed consent. Lexicomp® Lexi-InteractTM Online (Lexi-Comp, Inc., Hudson, USA) was used for DDI analysis. Poisson regression was used for regression analysis for determining risk factors associated with exposure to DDIs.
Results: Total of 151 patients admitted to Department of Cardiovascular Medicine were included in the research, and the average age was 67.1 years. The average number of drugs was 9.3 and patients had an average of 8.1 diagnoses. Overall, 1268 potential clinically significant DDIs were determined, of which the most frequently determined interactions were level C (90.9%), then level D (8.6%) and level X (0.6%). Factors associated with the exposure to DDIs were decreased renal function, recent hospitalisation, total number of comorbidities and polytherapy. Specific diagnoses associated with number of DDIs were arrhythmia, heart failure, diabetes mellitus and disease of the respiratory system. Most of the identified DDIs require increased patient monitoring due to the risk of hypotension, nephrotoxicity, hyperkalemia, increased risk of bleeding, and hypoglycemia.
Conclusion: This research provides insight into the frequency and types of DDIs in hospital patients with CVD at admission in first

prescribed pharmacotherapy. The results indicate patient's condition that needs to be monitored and can be related to DDIs. Hospital admission is a one of the key points for timely identification of DDIs. Potential DDIs require appropriate DDI interventions in order to optimise pharmacotherapy and increase patient safety.

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MAGNESIUM AND TYPE 2 DIABETES MELLITUS CONTROL AND OUTCOMES: A DOUBLE-BLIND RANDOMIZED CONTROL TRIAL.

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Background: There is growing evidence for the effect of long-term hypomagnesemia on the worsening of Type 2 Diabetes Mellitus (T2DM) control and prognosis.
Aim: This randomized controlled trial (RCT) aimed to study the effect of oral magnesium (Mg) supplements on glycated hemoglobin (HbA1c) reduction, lipid profile, and blood pressure.
Method: A prospective double-blind RCT with control and interventional groups was conducted in adult patients ($\geq$ 18 years) with T2DM, treated with oral hypoglycemic agents $\pm$ insulin, who had HbA1c $\geq$ 7% and creatinine clearances above 30 ml/min. Patients were randomly assigned to receive Mg oxide tablets of 302 mg elemental dose or placebo tablets and to be followed up for 12 months (post 3-month, 6-month, and 12-month).
Results: At this initial phase, 161 patients were randomized, out of which 87 have already completed the 3-month follow-up (42 (A) *vs* 45 (B)). An overall median age was 59 (49–66) years and 55% (48/87) were females. The prevalence of hypomagnesemia by iMg concentrations ($\leq$ 0.46 mmol/L) and tMg concentrations ($\leq$ 0.69 mmol/L) was 13.8% (12/87) and 11.5% (10/87), respectively. Intention to treat analysis (n = 87) revealed one group (A or B) was associated with statistically significant reductions in systolic blood pressure (SBP), (-4.8 *vs* 2.9 mmHg; $p = 0.045$) but not with other outcomes of interest, HbA1c (-0.1 *vs* 0; $p = 0.664$). Per-protocol analysis (n = 78) reinforced the association with SBP ($p = 0.021$) and revealed a statistically significant reduction in diastolic blood pressure (DBP), (-4.0 *vs* 1.9 mmHg; $p = 0.049$).
Conclusion: These results of the initial follow-up period (3-month) imply that Mg supplements may influence DM outcomes in either direction. Data analysis following a complete follow-up period with a full cohort may reveal more apparent associations with HbA1c reduction.
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PP155

DRUG-RELATED PROBLEMS AMONG AMBULATORY PATIENTS

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Background: Identification, prevention, and resolution of drug-related problems in patients, especially with chronic disease, is carried out during Medication review (MR). Manifest and potential drug-related problems (DRPs) may impact the effectiveness of pharmacotherapy.
Aim: The study aimed to analyze DRPs detected among patients in community pharmacies based on medication interviews. Pharmacy students conducted interviews during a six-month internship in community pharmacies in the academic year 2021/2022. Randomly selected patients suffering from hypertension, diabetes, asthma, or COPD were included in the study.
Method: Each student conducted medication interviews with one selected patient using a comprehensive form prepared by the researchers from the Department of Social Pharmacy, which facilitated the collection of patient information (age, sex, weight, height, diseases, diet, allergies, etc.), medication details (name, dosage, duration of therapy, adherence, side effects, patient concerns), and self-monitoring results (blood pressure/glucose level/PEF; frequency of measurements and the latest result). In the next stage, researchers analyzed the collected anonymous data for the occurrence of DRPs and causes of drug-related problems using the DRP classification v6.2
Results: Data from 99 patients (53.53% female) aged 25 to 93 years, with 1 to 6 diagnosed diseases, were included in the study. The patients used 813 medications, of which 538 were for chronic conditions. Identified 289 DRPs were identified in 97 (97.98%) patients. Of these, 105 (36.33%) DRPs were related to treatment effectiveness (P1), 133 (46.71%) to adverse reactions (P2), 15 (5.19%) to unnecessary drug treatment (P3.2), and 6 (2.08%) to drug treatment more costly than necessary (P3.1). On average, one DRP was caused by 1.2 reasons (min. 1, max. 4). A total of 337 causes of DRPs were identified, with 226 (67.06%) related to drug selection, 44 (13.06%) to dose selection, and 32 (9.5%) related to the way the patient uses the drug.
Conclusion: The study's results indicate the prevalence of DRPs among ambulatory patients, which can be identified during a drug interview conducted in community pharmacies. During an interview with a patient, pharmacists should ask about pharmacotherapy's effectiveness and possible side effects. It is imperative to assess pharmacists' potential for preventing and solving DRPs and how this can significantly enhance the effectiveness and safety of pharmacotherapy.

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MEDICATION NON-ADHERENCE, DRUG-RELATED PROBLEMS, AND DISEASE ACTIVITY IN RHEUMATOID ARTHRITIS PATIENTS: A CROSS-SECTIONAL STUDY

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Background: Rheumatoid arthritis (RA) management is complex, with medication adherence and drug-related problems (DRPs) significantly impacting treatment success.
Aim: This study aimed to identify DRPs and factors related to disease activity in RA patients in Erbil, Iraq.
Method: A cross-sectional, multicenter study enrolled RA outpatients from two major Erbil hospitals (February 15th–June 1st, 2023). The PCNE Classification of Drug-Related Problems V9.1 categorized DRPs. Medication adherence was assessed using the translated and validated Kurdish version of the Medication Adherence Report Scale 5 (MARS-5). Binary logistic regression was performed to identify factors associated with the Disease Activity Score (DAS-28).
Results: Among the 203 patients (91.1% female, mean age 51.9 years), only 36.45% were adherent to their medications. The majority of DRPs (43.74%) involved potential adverse drug events due to insufficient therapy or incorrect medication combinations, while 36.4% related to suboptimal drug treatment effectiveness. Among them, 40.39% exhibited high disease activity based on DAS-28 scores. Medication non-adherence, presence of DRPs, and female gender were significantly associated with worsened disease activity ($p < 0.05$).
Conclusion: This study revealed a high prevalence of medication non-adherence and DRPs among RA patients, with these factors significantly impacting disease activity. These findings highlight the urgency for interventions promoting medication adherence and addressing DRPs to improve RA management in Erbil.
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PP158

CHANGES IN INHALATION THERAPY IN PATIENTS WITH LUNG CANCER: A RETROSPECTIVE COHORT STUDY

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Background: The symptoms of lung cancer and COPD are often overlapping. Moreover, both diseases are highly associated with a smoking history. Thus, inhalation therapy for obstructive lung diseases may often be initiated or modified prior to an initial lung cancer diagnosis, possibly with no valid indication and contributing to additional adverse events (AEs).
Aim: To describe the characteristics and changes in inhalation therapy in patients with non-small-cell lung cancer (NSCLC) before, at and after its initial diagnosis.
Method: A retrospective observational cohort study in patients with NSCLC, treated at the University Clinic Golnik, Slovenia, a referral centre for diagnosis and treatment of pulmonary disease, was conducted. Patient information and other medical data were collected by reviewing patient medical records. At the study centre, data on cancer treatment, concomitant medications and AEs during cancer treatment are collected prospectively and using pre-specified proformas.
Results: From the 322 reviewed NSCLC patients, 80 (25%) had an inhalation therapy changed 6 months prior to NSCLC diagnosis, with 62 patients (19%) being prescribed an inhalation therapy for the first time. Of the 80 patients with a change in inhalation therapy, the majority (74; 93%) reported respiratory symptoms at the time of NSCLC diagnosis. The indication for inhalation therapy was COPD (48/80; 60%), asthma (7/80; 9%) or both (8/80; 10%), while as much as a fifth of patients (17/80; 21%) had no valid indication. Prior to NSCLC diagnosis, patients had prescribed a median of 3 inhalation agents (IQR: 2–4), with short-acting bronchodilators (SABA/SAMA) being prescribed most often (69/80; 86%) and inhalation corticosteroids (ICS) being prescribed in 38% (30/80) of patients. Patients often discontinued inhalation therapy, with only 55/80 (69%) and 40/72 (56%) taking inhalation medications at the start and six months after cancer treatment initiation, respectively. Oral candidiasis occurred more often in patients with vs without ICS (16/31; 52% vs 14/49; 29%; Chi^2, $p = 0.038$) but not pneumonia (13/31; 42% vs 14/49; 29%; Chi^2, $p > 0.05$).
Conclusion: Inhalation therapy is initiated or changed in a quarter of patients prior to lung cancer diagnosis, without a valid indication in a fifth of cases. Patients with an ICS more often experienced oral candidiasis.

References/Acknowledgments: None.

PP159

THE CLINICAL EFFECT OF STEROIDS ON HEARING PRESERVATION IN PDT PATIENTS IN COCHLEAR IMPLANTATION

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Background: Recent advances in cochlear implantation which consist of: the design of the electrodes, atraumatic surgical techniques and monitoring of cochlear function during implantation, draw attention also to administration of steroids and other anti-inflammatory drugs for preserving residual hearing.
Aim: The main aim of this study was to assess the clinical effect of steroids (dexamethasone and prednisone) on hearing preservation in patients who underwent cochlear implantation with different cochlear implant systems (Oticon®, Advanced Bionics®, Med-El®).
Method: 147 adult patients met the inclusion criteria and were enrolled to the study and divided into three groups depending on the brand of cochlear implant they received and participated in all follow-up visits regularly. They were also randomly divided into three subgroups depending on the steroid administration regime: (1) intravenous dexamethasone (0.1 mg/kg body weight twice a day for three days); (2) combined intravenous and oral steroids (dexamethasone 0.1 mg/kg body weight twice a day plus prednisone 1 mg/kg weight once a day); and (3) no steroids (control group).
Results: The results were measured by pure tone audiometry (PTA) at three time points: (i) before implantation, (ii) at processor activation, and (iii) 12 months after activation. A hearing preservation (HP) figure was also calculated by comparing the preoperative results and the results after 12 months. Further measures collected were electrode impedance and hearing threshold in the non-operated ear. The highest HP measures were obtained in the subgroups who were given steroids. Of the 102 patients given steroids, HP was partial or complete in 63 of them (62%). In comparison, partial or complete HP was achieved in only 15 patients out of 45 (33%) who were not given steroids. There were differences between the three cochlear implant groups, with the Med-El and Advanced Bionics groups performing better than the Oticon group (45% and 43% of the former two groups achieved partial or complete HP compared to 20% in the latter). Hearing thresholds in the non-operated ear were stable over 12 months.

Conclusion: Pharmacological treatment with steroids in patients undergoing cochlear implantation helps to preserve residual hearing.

PP160

EXPLICIT CRITERIA TO DETECT POTENTIALLY INAPPROPRIATE PRESCRIBING IN OLDER PEOPLE WITH RENAL IMPAIRMENT

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Background: Renal impairment naturally occurring in the elderly can lead to renally excreted drug accumulation. Potentially inappropriate prescribing put older people at higher risk of developing adverse effects. Some medication review explicit criteria include this item but creatinine serum values are needed.
Aim: To compare the explicit tools Beers, STOPP/START, EU(7)-PIM, and GheOP^{3}S Criteria in detecting potentially inappropriate prescribing (PIP) and the need for dose adjustments of medications based on renal function in a real-world group of elderly patients in primary healthcare.
Method: Cross-sectional study in a USF in Central Portugal (Ethics approval CE-19/2022). Users over 65 years old taking at least one medication were included. Creatinine clearance (CrCL) was estimated by Cockcroft-Gault equation. Beers2023, STOPP/STARTv.3, EU(7)-PIM, and GheOP^{3}Sv.2 were used to identify PIP associated with renal impairment. Each drug with a specific recommendation for renal dose adjustment was classified as requiring dose adjustment(DA), being contraindicated (CI), or to be used with caution (C). When patient's CrCL was lower than the threshold for a criterion, an alert was generated.
Results: The study included 1859 participants with a mean age of 76.4 years (SD 7.7), 57.4% women and 6.1 (SD 3.7) medicines/participant. The mean CrCL was 68.2 mL/min (SD 23.9), with 33.8% of participants below 60 mL/min. From 11,198 prescriptions, 44.0% were related to these individuals. GheOP^{3}S Criteria contributed with 85.8% for total PIPs. Drugs affecting the renin-angiotensin system, biguanides, thiazide diuretics, and fator Xa inhibitors were the most frequent PIPs. Of the total prescriptions, 912 alerts were generated: 84.4% DA, 10.9% CI, and 4.7% C. For individuals below 60 mL/min, 16.5% of the prescriptions generated an alert. GheOP^{3}S Criteria contributed with 74.0% for total alerts. Pharmacological classes that generated more alerts were agents affecting the renin-angiotensin system, biguanides, antiepileptics, thiazide diuretics, antigout agents, and factor Xa inhibitors.
Conclusion: The best approach to identify PIP related to renal impairment is to use multiple tools. However, GheOP^{3}S Criteria appears to be the most suitable option for renal issues in elderly patients due to its *Addendum*, which focused on drugs with renal excretion frequently used in elderly patients with renal disorders.

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PP161

COMPARATIVE ANALYSIS BETWEEN USTEKINUMAB AND RISANKIZUMAB IN CROHN'S DISEASE

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Background: Crohn's disease is an inflammatory bowel disease (IBD) of autoimmune origin that seriously impairs the quality of life of its patients. A recently authorized systemic treatment option is Risankizumab, a monoclonal antibody directed against IL-23, like Ustekinumab.
Aim: The main objective of the study was to compare Ustekinumab versus Risankizumab in Crohn's disease.
Method: Multicenter, descriptive and retrospective study of patients treated with Ustekinumab or Risankizumab from September 2023 to May 2024 and who had reached week 16 of treatment or higher. Baseline variables were collected: sex, age, smoking habit, duration of treatment and adverse effects (AE). Effectiveness was assessed with the following variables: fecal calprotectin (FCP), number of stools, blood in stool and c-reactive protein (CRP) both before and 16 weeks after the start of treatment. Sources of information: application of electronic prescription Prisma® and computerized clinical history Diraya®.
Results: A total of 30 patients were included. In the Ustekinumab cohort (17/30), the mean age was 42.1 years and 47% were men, of the total 23.5% were smokers; whereas in the Risankizumab cohort (13/30), the mean age was 55.3 years and 76.9% were men, of the total 30.7% were smokers. Regarding effectiveness, in patients with Ustekinumab and Risankizumab they started from a median baseline FCP of 1501 and 1119, and after approximately 16 weeks of treatment of 466 and 1505 respectively. On the other hand, the previous CRP was 24.1 and 14.6, and after 16 weeks of treatment it was 13.1 and 13.5 respectively. The average number of daily bowel movements prior to treatment with Ustekinumab and Risankizumab was 5 and after 16 weeks it was 3, in both cases. Regarding blood in the stools, 29% and 61.5% of patients had it before treatment and after 16 weeks it was 5.9% and 30.8% respectively.
In relation to safety, in the cohort treated with Ustekinumab, only one AE related to joint pain was reported, while with Risankizumab, one patient with Herpes-Zoster was reported.
Conclusion: Risankuzmab, a novel alternative for Crohn's disease, and Ustekinumab appear to be safe and effective. Despite this, more long-term data are needed to assess the effectiveness of Risankizumab versus Ustekinumab and thus assess the best alternative for patients with Crohn's disease.

PP162

MULTICENTER STUDY: EVALUATION OF THE USE OF UPADACITINIB AND RISANKIZUMAB IN CROHN'S DISEASE

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Background: Crohn's disease is an autoimmune inflammatory bowel disease. Risankizumab and upadacitinib are novel alternatives that, following their approval, have been able to provide new options for this group of patients. Upadacitinib is a Janus kinase (JAK) inhibitor and risankizumab is an interleukin 23 (IL-23) inhibitor.
Aim: The primary objective of this study was to evaluate the use, effectiveness and safety of upadacitinib and risankizumab in patients with Crohn's disease. All participants who reached at least 24 weeks of treatment were included.
Method: Multicenter, descriptive, and retrospective from September 2023 to May 2023. Baseline variables collected: age, sex, start date of the treatment and other autoimmune diseases. Effectiveness was evaluated using the number of bowel movements and the number of patients with intestinal surgery prior to and 24 weeks after treatment. Safety was evaluated based on the occurrence of adverse reactions. Data were collected using the digital medical record system Diraya® and the Prisma® application. Patient interviews were also conducted in the outpatient areas of the participating hospitals.
Results: A total of 33 patients were included. In the upadacitinib group (16/33), the mean age was 38 years (63% men). In risankizumab (17/33), mean age was 56 years (65% men). Other autoimmune diseases were present in our patients. In the upadacitinib group, psoriatic arthritis in 13%, hidradenitis in 6%, uveitis in 6%, and atopic dermatitis in 6%. In the case of risankizumab, 6% had psoriatic arthritis and 6% had hidradenitis. Regarding effectiveness, the mean number of bowel movements prior to treatment with upadacitinib was 5.6, while in the risankizumab group it was 5.4. At 24 weeks of treatment were 4.2 (25% reduction) and 3.5 (35.2% reduction), respectively. Previous intestinal surgical resection before treatment with risankizumab or upadacitinib was present in 17.4% and 50% respectively and, after initiating treatment, no patient underwent intestinal surgery. Even though before starting risankizumab or upadacitinib, in 17.4% and 15% was considered the need for intestinal surgery. 13% of the patients receiving upadacitinib experienced acne, 6% nausea and 6% skin rashes. In risankizumab group, a 6% had reactivation of the herpes zoster virus.
Conclusion: Risankizumab and upadacitinib are novel therapies for Crohn's disease that appear to be effective and safe, as they seem to decrease the number of bowel movements and the risk of undergoing intestinal surgery.

PP163

MULTICENTER STUDY: EVALUATION OF THE EFFECTIVENESS AND SAFETY OF USTEKINUMAB AND FILGOTINIB IN ULCERATIVE COLITIS

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Background: Ulcerative colitis is an autoimmune inflammatory bowel disease for which new therapies are being developed to improve patients' quality of life. Filgotinib, a selective inhibitor of the Janus kinase (JAK) that has been approved recently for the treatment of this disease. Ustekinumab is an interleukin-12 and interleukin-23 inhibitor.
Aim: The primary objective of this study was to compare the effeciveness and safety of filgotinib versus ustekinumab in ulcerative colitis. All participants who reached at least 26 weeks of treatment were included.
Method: Multicenter, descriptive, and retrospective study lasting 6 months from January 2023 to July 2023. Baseline variables collected: sex, age, previous therapies, smoking habits, comorbidities, potential associated immunosuppressants and start date. Effectiveness was evaluated using: fecal calprotectin, number of bowel movements, blood in stools and C-reactive protein (CRP), before and after 26 weeks. Additionally, safety was assessed by the occurrence of adverse reactions. Data were collected using the digital medical record system Diraya® and the Prisma® application. Patient interviews were also conducted in the outpatient areas of the participating hospitals.
Results: A total of 39 patients (51% men, 49% women) with a mean age of 42 years were included. In the ustekinumab group (26/39), the mean age was 44 years, with 46% men and 54% women. In filgotinib one, mean age was 39 years, with 62% men and 38% women. Regarding effectiveness, patients with ustekinumab and filgotinib had a median baseline fecal calprotectin of 1977 and 2598, respectively. After 26 weeks of treatment, these values decreased to 1208 and 69, respectively (39% and 97% decrease). Baseline CRP was 5,1 before ustekinumab and it decreased to a median of 2,8 (45% decrease). In the case of filgotinib, it decreased from 4,1 to 2.35 (43% decrease). The number of bowel movements in the ustekinumab group was 5, with the presence of blood in the stool in 38% of the patients. These values decreased to 3 and 12%, respectively. In the case of filgotinib, it decreased from 4 to 3 and from 31 to 8%, respectively.
4% of the patients receiving ustekinumab experienced joint pain, while in the filgotinib group 8% of the patients experienced headaches and another 8% increased skin sensitivity.
Conclusion: Filgotinib is a novel alternative for patients with ulcerative colitis that appears to be safe and effective. However, longer-term follow-up with more patients is needed to confirm the incidence of adverse effects and effectiveness of this drug compared to ustekinumab.

PP164

ANALYSIS OF USTEKINUMAB AND UPADACITINIB IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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Background: Inflammatory bowel disease mainly includes Crohn's disease and ulcerative colitis. In patients with inflammatory bowel disease, there were few therapeutic alternatives; however, new therapies are gradually being developed, promising a hopeful future. Upadacitinib is a Janus Kinase (JAK) inhibitor and ustekinumab is an interleukin (IL) 12 and IL 23 inhibitor.
Aim: The main objective of the study was to evaluate the effectiveness and safety of ustekinumab and upadacitinib in Crohn's disease (CD) and ulcerative colitis (UC). Patients who reached at least 34 weeks of treatment were included.

Method: Multicenter, descriptive, and retrospective study from March 2023 to May 2024. Baseline variables were: sex, age, prior therapies, smoking habits, comorbidities and associated immunosuppressant. Regarding effectiveness, variables were: fecal calprotectin (FCP), number of bowel movements, blood in stools, and C reactive protein (CRP) before and after 34 weeks.To evaluate safety adverse reactions was monitored. Data were collected using the digital medical history and the Prisma® outpatient dispensing module. Additionally, patient interviews were conducted in the outpatient area of the hospitals.
Results: A total of 46 patients were included. In the ustekinumab group (26/46) 53.9% were women,with an average age of 44.6 years.65.3% had CD and 34.5% had UC. Additionally, 55% of the patients had intensified treatment. In the upadacitinib group (20/46), 65% were men with an average age of 37 years.65% had CD and 35% had UC. Patients with ustekinumab and upadacitinib had a median baseline FCP of 1977 and 1207, and after 34 weeks was 768 and 452, a reduction of 60.5% and 62.5% respectively. The median CRP previous ustekinumab or upadacitinib was 5.1 and 3.6, and after 34 weeks, was 2.7 and 2.8, a reduction of 53.9% and 22.2% respectively. The average number of bowel movements previous to treatment with ustekinumab and upadacitinib was 5 and 6.1 and after 34 weeks, it was 3 and 5. Blood in the stools previous of ustekinumab or upadacitinib were 38% and 60% and after 34 weeks were 12% and 25% respectively. 3.5% of patients receiving ustekinumab experienced joint pain, while in the upadacitinib group 10% acne, 5% herpes zoster, 5% thrombosis and 5% skin rashes and nausea.
Conclusion: Ustekinumab and upadacitinib appear to be effective in the treatment of inflammatory bowel disease. However, a study involving more patients and conducted over a longer period would be necessary to confirm whether the incidence of adverse reactions is actually higher with upadacitinib.

PP165

ANTIBIOTIC PROPHYLAXIS IN ELECTIVE SURGERY–DOSE ERRORS AND SURGICAL SITE INFECTION RISKS. AN OBSERVATIONAL STUDY

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Background: Antibiotic prophylaxis is an important measure to the prevention of surgical site infections (SSI). International and guidelines made by experts in the University clinical center of Republika of Srpska provide recommendations for the proper implementation of prophylaxis.[1,2,3] However, studies indicate poor compliance to the guidelines in many hospitals.
Aim: Our prospective, observational study conducted in three months period in 2023 analysed 158 patients who were hospitalised in Orthopedic Ward and aimed to determine the level of compliance with the guidelines in the application of antibiotic prophylaxis. Also, we aimed to evaluate risk for SSI in patients with inadequate dose or duration of prophylaxis.
Method: Exclusion criteria from this study were urgent surgical procedures, high inflammation markers and previous antimicrobial treatment in patient. For that reasons 53 patients were excluded from the observation. During the study period 23 more patient were excluded due to different reasons. Medical records provided information about patient initials, age, gender, smoking status, alcohol consumption, drug allergies, type of surgery, comorbidities, choice of antibiotic, duration of prophylaxis, antibiotics at discharge etc. The collected data were analyzed by descriptive and analytical statistics. The research was approved by the hospital's Ethics Committee.
Results: Only one out of 82 patients who underwent surgical procedures did not receive antibiotic prophylaxis. Cefazolin was administered to all patients who were not allergic to penicillin. Two patients allergic to penicillin were given gentamicin with vancomycin or ciprofloxacin. Antibiotics were administered in operating room while information about exact time of their administration, as well as intraoperative blood loss were missing. Inappropriate dose of cefazolin was given to 48 (49,30%) patients. 63 (77,80%) patients were given more the one dose of cefazolin. Dose or duration of prophylaxis were inappropriate in 74 (91,40%) patients. Evaluation of risk factors for SSI in group of patients with inadequate dose or duration of antibiotic prophylaxis were compared to SSI risk in group of patients with adequate dose and duration of prophylaxis. Both patient-related SSI risk factors and procedure-related SSI risk factors were observed. No statistical difference was evident in any of the observed SSI risk factors compared in two groups.
Conclusion: Compliance with the guidelines was low for cefazolin dose and duration of prophylaxis. Full compliance with the recommendations was achieved with regards to the choice of antibiotic for patients not allergic to penicillin and the route of antibiotic administration. Most exceptions from recommendations were found in the duration of prophylaxis. No difference in SSI risk was noticed between group of patients with inadequate dose or duration of antibiotic prophylaxis in comparison to SSI risk of patient with adequate dose or duration of therapy.

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PP166

DRUG-RELATED PROBLEMS EXPERIENCED BY RHEUMATOID ARTHRITIS PATIENTS AFTER METHOTREXATE INITIATION

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Background: Methotrexate (MTX) is the cornerstone of rheumatoid arthritis (RA) treatment. However, up to 42% of the patients are non-adherent, and 25% discontinue MTX after one year. This may be due

to drug-related problems (DRPs), which potentially have a negative effect on a patient's well-being, drug adherence and/or persistence.
Aim: This observational study aims to identify the number and type of DRPs and the moment of time at which patients with RA experience DRPs in the first three months of MTX use.
Method: A prospective observational study was conducted in the outpatient rheumatology department of a hospital specialized in movement and posture. Adult patients with a recent clinical diagnosis of RA initiating MTX treatment between March and June 2023 were invited to participate. An interview guide based on the New Medicines Service was used to question patients about experienced DRPs at 2, 6 and 12 weeks after treatment initiation. Earlier reported DRPs were followed-up during subsequent interview(s). DRPs were categorized using a classification system for patient-reported DRPs and scored on uniqueness within patients.[1] Data was analyzed descriptively.
Results: Fifty patients were included (median age 62 years (IQR 51–68), 66% female) of which 3 patients discontinued MTX treatment. All patients reported at least one DRP, with a median of 6 unique DRPs per patient (IQR 3–8). At weeks 2, 6 and 12 respectively, 3 (IQR 2–5), 1 (IQR 0–3) and 0.5 (IQR 0–1) unique DRPs per patient were reported. The top 5 reported DRPs were concerns about (long-term) side effects (46%), nausea (44%), fatigue (32%), medication non-adherence (26%) and information needs regarding dose instructions (26%). If for weeks 6 and 12 the newly reported and still current DRPs from earlier interviews are taken together, patients experience a median of 2 (IQR 1–4) and 1.5 (IQR 0–4) DRPs at weeks 6 and 12, respectively. Thirty-three percent of the DRPs reported in weeks 2 and 6, were still present after 12 weeks.
Conclusion: Patients with RA experience numerous DRPs in the first three months of MTX use. One-third of the DRPs experienced in weeks 2 and 6 are still present after 3 months. Adequate support for patients to solve DRPs soon after their occurrence may reduce the burden of drug treatment and improve adherence and/or persistence.

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PP167

CLINICAL PHARMACIST ROLE IN ACHIEVING TREATMENT GOALS IN HYPOTHYROIDISM: A RANDOMIZED CONTROLLED TRIAL

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Background: Hypothyroidism (HoT), defined as a deficiency in thyroid hormone levels, exhibits a global prevalence of approximately 4–5%. Hypothyroidism treatment involves lifelong thyroxine replacement therapy and regular monitoring1,2.
Aim: The objective of this study was to assess the impact of clinical pharmacist (CP) intervention in managing drug-related problems(DRPs) on outcomes among hypothyroid patients receiving levothyroxine(LT4) therapy.
Method: A randomized controlled trial was carried out involving outpatients attending the endocrinology clinic at a university hospital in Istanbul from March 2022 to September 2023. Participants were randomly assigned to control (CG) and intervention (IG) groups. In the CG, CP identified and classified DRPs based on PCNE (Pharmaceutical Care Network Europe) v9.1 criteria. Clinical pharmacists identified and resolved DRPs in the IG and provided patient counseling services.
Results: 43 patients assigned to the CG(n = 25) and IG(n = 18), mean age was 45.32 ± 13 and 53.83 ± 15.79 years, respectively. The mean number of comorbidities was 1.83 ± 1.46, 1.56 ± 1.25 for CG and IG, with diabetes mellitus(21.12%) and hypertension(14.08%) being the most common. A total of 118 DRPs were identified and decreased to 76 after CPs intervention. DRPs due to potential drug-drug interactions(pDDIs) and inappropriate timing significantly decreased in 2nd visit(p:0.016). Total number of DRPs was higher for IG, but reduced in 2nd visit($p < 0.05$). In IG, both the total number of DRPs(66to24) and pDDIs(21 to 0) significantly decreased ($p < 0.001$), all recommendations accepted and implemented. Calcium carbonate(41.37%) and pantoprazole(27.58%) were the most common medications for pDDIs. There was no difference in adherence. But, significant improvements were observed in both groups regarding forgetting to take medication($p < 0.001$) and attention to the time of drug intake in the 1st and 2nd visit($p < 0.05$).
Conclusion: In conclusion, this study point outs the importance of reevaluating target TSH levels by CP for HoT patients to prevent potential over- or undertreatment and associated side effects. CPs' interventions have positive outcomes such as identification and resolving the DRP and increasing the adherence level.

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PP170

CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING PRACTICES IN THE PEDIATRIC ONCOLOGY-HEMATOLOGY SERVICE AND ADHERENCE TO GUIDELINES

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Background: Chemotherapeutics were divided into 4 categories based upon the risk of emesis in the absence of antiemetic prophylaxis: high (> 90%), moderate (30–90%), low (10–30%) and minimal (< 10%). Failure to management of chemotherapy-induced nausea and vomiting may lead to a decline in patient's quality of life and disruption of later chemotherapy cycles.
Aim: This study was revealed the emetic risks of chemotherapeutic agents used for various malignancies in pediatric patients and to evaluate the adherence of antiemetic treatments with the guidelines.

Method: This prospective, descriptive study was conducted in pediatric hemato-oncology ward of a tertiary hospital in Turkey, for 2 months. ASHP/ACCP (American Society of Health-System Pharmacists/American Society of Clinical Pharmacy) and COG (Children's Oncology Group) supportive care guidelines were used to evaluate the chemotherapy-induced nausea and vomiting. The emetogenic potential of each agent in the chemotherapy cycles was checked, and which antiemetic treatment would be appropriate according to these potentials was compared with the practices in the ward. Patients were hospitalized in the ward for at least 24 h were included in the study.
Results: A total of 24 patients were included in the study. All patient's median age was 7 years. 9 of the patients were diagnosed as ALL (acute lymphoblastic leukemia), 3 with Wilms tumor, 2 with Ewing sarcoma, 2 with medulloblastoma and, 2 with osteosarcoma. The most prescribed chemotherapeutics were etoposide (29,2%), cyclophosphamide (29,2%), vincristine (29,2%), and ifosfamide (20,8%). 11 of 52 chemotherapeutics had high emetic risk, 23 of them had moderate emetic risk. 8 of chemotherapeutic protocols had high emetogenic potential and, 16 of chemotherapeutic protocols had moderate emetogenic potential out of 24 different protocols. Protocols with high emetogenic potential, antiemetic treatment should include triple combination therapy (5-HT3 receptor antagonist + NK-1 receptor antagonist + dexamethasone). Only 1 of 8 patients was received triple antiemetic combination therapy above mentioned. Protocols with moderate emetogenic potential, antiemetic treatment should include double combination therapy (5-HT3 receptor antagonist + NK-1 receptor antagonist or dexamethasone). 5 of 16 patients were received double antiemetic combination therapy.
Conclusion: In this study, the compliance of the patients we followed with the treatment guidelines regarding chemotherapy-induced nausea and vomiting was moderate. Clinical pharmacists may support clinical ward with informing about emetogenic risks of chemotherapeutics and facilitating the compliance with clinical guidelines of chemotherapy-induced nausea and vomiting.

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PP171

GOAL ATTAINMENT, MEDICATION ADHERENCE AND GUIDELINE ADHERENCE IN HYPERTENSION AND DYSLIPIDAEMIA IN IRELAND

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Background: The appropriate treatment of high blood pressure (BP) and low-density lipoprotein cholesterol (LDL-C), according to guidelines, reduces a patient's risk of a cardiovascular event.[1] Medication adherence plays a role in treatment outcome.[2] BP and LDL-C goal attainment, medication adherence and guideline adherence are not well characterised in Ireland.
Aim: This systematic review aims to evaluate the attainment of BP and LDL-C goals among the Irish population in both primary and secondary prevention of cardiovascular diseases, the level of adherence to prescribing guidelines by doctors and the level of medication adherence among patients to prescribed medicines.
Method: The systematic review protocol was published in PROSPERO (CRD42023422050). Five databases were searched for relevant articles in March 2024. Quantitative articles reporting levels of goals attainment, medication adherence or guideline adherence for LDL-C and BP among Irish adults aged $\geq$ 18 years were included. The proportion of patients attaining their LDL-C or BP goals were statistically combined across studies using the random effect model.
Results: Following screening, 23 eligible articles were identified. The achievement of LDL-C $<$ 1.8 mmol/L was 41% (95% CI 31,52), which represents lower goal attainment compared to the 69% of people (95% CI 62,76) reported to have achieved the less stringent goal of LDL-C $<$ 3 mmol/L. BP goal achievement using the target BP of $<$ 140/90 mmHg was 56% (95% CI 46,65). Medication adherence levels were variable and ranged between 27 and 92%. Guideline adherence findings demonstrated that not all patients who should be on lipid-lowering therapy are and that choice of antihypertensive is not always in line with the guidelines.
Conclusion: Approximately one third of deaths in Ireland each year are caused by cardiovascular disease, despite the vast majority of these events being preventable. From the reported data, there is room for improvement in goal attainments in people at moderate to very high risk of a cardiovascular event and medication adherence and guideline adherence are both sub-optimal.

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PP172

CARDIOVASCULAR RISK CONTROL IN COMMUNITY-BASED IRISH ADULTS WITH DYSLIPIDEMIA

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Background: The attainment of low-density lipoprotein cholesterol (LDL-C) goals are noticeably suboptimal among people at high to very high risk of cardiovascular events.[1,2] Optimal adherence to the lipid lowering therapy (LLT) prescribing guidelines is a key factor for improving treatment outcomes.[1]
Aim: The study aims to assess both the prescribing pattern of LLT and attainment of LDL-C goals in Ireland using a real-world cohort of population in a primary care center.
Method: As part of the Mitchelstown Cohort Rescreen in 2015, 1,378 participants were recruited from a single primary care center. The Systematic Coronary Risk Evaluation (SCORE) system was used to estimate the 10-year risk of the first fatal cardiovascular event for people with no previous diagnosis of cardiovascular disease. Medication and diagnosis data were extracted from electronic patient records. Prescribing pattern of LLT was assessed based on the 2011 European Guidelines for the Management of Dyslipidemias (ESC/EAS) and the 2013 American Guidelines on the Treatment of Blood Cholesterol (ACC/AHA). Statistical analysis was conducted using STATA.
Results: Among 1,378 participants, aged 64.7 ($\pm$ 5.4), 66 participants with no previous cardiovascular events were at high or very high risk of CVD mortality (SCORE $\geq$ 5). Only 30 (46%) of them were prescribed LLT. The majority were prescribed statin monotherapy (83%); however only 28% were prescribed a high intensity statin. Using ESC/EAS guideline recommended LDL-C goals, only nine of the participants who were prescribed LLT achieved the target LDL-C level of $<$ 2.5 mmol/L.
Conclusion: Early findings demonstrate a potentially suboptimal prescribing of LLT among people who required primary prevention of cardiovascular diseases. In addition, a very limited number of people achieved the target LDL-C level in the primary prevention group, which is concerning.

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PP173

PHARMACOTHERAPEUTIC ADEQUACY AT HOSPITAL DISCHARGE ASSOCIATED WITH MEDICATION RECONCILIATION AT ADMISSION

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Background: Pharmacotherapeutic adequacy is essential for optimizing patient care, ensuring medication effectiveness, minimizing adverse events, and enhancing overall health outcomes, making it a cornerstone of effective healthcare management.
Aim: To determine the incidence of home medication-related problems (HMRPs) in surgical patients included in a pharmacotherapeutic reconciliation program upon admission, analyze the type of HMRP, pharmaceutical intervention, and outcome of the intervention.
Method: Prospective observational study conducted in 2024 at a first level hospital. The study included polypharmacy patients or those on chronic treatment with any high-risk medication and with a scheduled admission for surgical intervention, in whom a HMRP was detected. All of there were communicated by the pharmacist to the patient's primary care physician, and the physician's actions were monitored. Sources of information: electronic medical records and interviews with patients/caregivers. Variables measured: type of HMRP detected, type of intervention performed by the pharmacist, and outcome of the intervention.
Results: 48 patients were included. 65 HMRPs were detected, with 42 of them due to non-adherence (5 related to high-risk medications for chronic patients). The high-risk medications involved were diuretics (3), NOACs (1), and cytostatics (1). The remaining HMRP included therapeutic redundancies (2), prescription of contraindicated medication (1), inadequate medication/device management (2), administration error (1), and dosing/regimen/route of administration error (17). 49 interventions were carried out by the pharmacist, with 3 provisional cancellations of the prescription and 46 pharmacotherapeutic reports for the patient's primary care physician. The actions of the primary care physician were considered appropriate when the modifications made to the prescription were in line with what was notified by the pharmacist (18), inappropriate when the modifications made by the physician did not address what was notified by the pharmacist (2), and not reviewed when the physician did not make any modifications (25).
Conclusion: Pharmacotherapeutic reconciliation programs at hospital admission play a crucial role in identifying home medication-related problems (HMRPs). Our study underscores the prevalence of non-adherence problems, emphasizing the need for pharmacist-led interventions and physician collaboration to optimize patient care and ensure medication safety. These findings underscore the importance of ongoing efforts to enhance pharmacotherapeutic adequacy in hospital discharge practices.

PP174

IMPLEMENTATION OF A PREOPERATIVE PHARMACOTHERAPEUTIC RECONCILIATION PROGRAM IN A GYNECOLOGY SERVICE

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Background: Pharmacotherapeutic reconciliation, is vital for patient safety and optimizing outcomes, particularly in surgical patients. Gynecological surgeries often entail complex medication regimens, making accurate reconciliation essential to minimize medication-related complications and enhance recovery.
Aim: To describe the circuit designed to implement a preoperative pharmacotherapeutic reconciliation process in a gynecology service in a first-level hospital. Determine the incidence and typology of potential reconciliation errors (PRE) detected and prevented in the first month following implementation.
Method: It was agreed to include poly-medicated patients or those under chronic treatment with at least one high-risk medication. At the time of surgical scheduling, patients were referred from the Gynecology Service to the Pharmacy Service for a clinical interview aimed at obtaining their complete and updated home treatment. The result of this interview was made available to the gynecologists. During the first month, a prospective observational study was conducted. Measured variables: number of prescribed medications, number and type of PRE detected and avoided.

Results: For each patient interviewed, a report was prepared detailing their usual treatment and specific perioperative management recommendations. This report was included in the electronic clinical history. Subsequently, the electronic prescription planned by the gynecologist for admission was reviewed, and any PRE detected were solved. Twenty-four patients were included. One hundred and two medications were reviewed, resulting in an average of 4.2 medications per patient. In 87% of the patients, some potential PREs were detected, with an average of 3.5 potential PREs per patient. The most frequently encountered type of PRE was omission (92%). One hundred percent of the detected PREs were communicated with the gynecologist and resolved before the patient's admission.
Conclusion: Implementation of a preoperative pharmacotherapeutic reconciliation program in a gynecology service demonstrated its effectiveness in identifying and preventing potential reconciliation errors (PREs). With a focus on poly-medicated patients, the program successfully reduced medication-related complications by facilitating accurate medication reconciliation. The high incidence of PREs detected underscores the importance of such programs in enhancing patient safety during the perioperative period.

PP175

EFFECTIVENESS OF FIDAXOMICIN IN PATIENTS WITH RECURRENT PSEUDOMEMBRANOUS COLITIS FOLLOWING ORAL VANCOMYCIN

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Background: Fidaxomicin has emerged as a promising option for pseudomembranous colitis. Though Clinical guidelines use fidaxomicin as first-line treatment in patients at greater risk for recurrence its use is still preserved at some Hospitals for cases post-vancomycin treatment due to its high cost.
Aim: To assess the effectiveness and safety of fidaxomicin in managing recurrent pseudomembranous colitis following oral vancomycin treatment, evaluate its impact on recurrence rates, and explore its potential as a preferred therapeutic option in this patient population.
Method: A retrospective cohort study was conducted among patients with recurrent Clostridium difficile infection who had previously received oral vancomycin therapy during 2023 from Internal Medicine and Digestive Services. Patient data, Vancomycin and Fidaxomicin treatments, associated adverse events and recurrences were collected from electronic medical records to assess the effectiveness of fidaxomicin in resolving pseudomembranous colitis and preventing further recurrences.
Results: In our study, 65 patients were treated initially with vancomycin, comprising 35 (54%) males and 30 (46%) females, with 15 (23%) experiencing relapse. The average age of the patients was 66.5 years. Among these relapsed cases, 9 (60%) were males and 6 (40%) were females. Five patients (33%) were retreated with vancomycin, while 10 (66%) received fidaxomicin. All fidaxomicin-treated patients resolved without recurrence, except for one (10%) who experienced recurrence at 8 months but resolved after another fidaxomicin cycle. Out of the 5 patients retreated with vancomycin, 2 experienced relapse. The only adverse effect observed during fidaxomicin treatment was abdominal pain, which was challenging to distinguish from the underlying pathology. It was reported in 4 (40%) patients, however did not implied treatment discontinuation.
Conclusion: Fidaxomicin emerges as an effective and safe option in the treatment of pseudomembranous colitis. Its lower recurrence rate compared to oral vancomycin, even in patients with a history of relapse, underscores its therapeutic value. However, the substantial cost differential, being 13 times more expensive than vancomycin, warrants consideration. Consequently, while fidaxomicin offers clinical benefits, the economic factor prompts some centers to retain vancomycin as the first-line treatment.

PP176

EVALUATION OF DRUG-DRUG INTERACTIONS IN A LIVER TRANSPLANTATION UNIT

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Background: Immunosuppressive drugs are the main treatment of prevention of organ rejection after solid organ transplantation. Since serum concentrations of drugs to matter, avoiding of potential drug-drug interactions (pDDIs) is important (1). pDDIs stem from tacrolimus, cyclosporine and polypharmacy in liver transplantation recipients frequently.
Aim: We aim to raise awareness in understanding the importance of pDDI and to investigate the pDDIs in liver transplantation recipients.
Method: The study was conducted retrospectively in the liver transplantation service of a teaching hospital from March, 2024 to April, 2024. Patients who were administered at least one immunosuppressive regimen were included in the study. Patient data were obtained from electronical records. Lexicomp® and Micromedex® databases were used to determine pDDIs. The SPSS 23.0 software program was used for statistical analysis. Descriptive data of quantitative were given as percent and the relationship of qualitative data between two groups was determined by the Chi-Square Test. p value smaller than 0.05 is considered statistically significant.
Results: The mean age of 50 patients (32% male) were 41.72 ± 2.7 years. The most common causes of liver transplantation were cirrhosis by hepatitis B (30%) and cryptogenic cirrhosis (22%). A total of 496 pDDIs of Lexicomp® consisted of C category by 79% (n = 392) while a total of 296 pDDIs of Micromedex® consisted of major category by 79.7% (n = 236) as the most seen categories. A total of 7 X category pDDIs of Lexicomp® while 13 contraindicated category of Micromedex® were determined. Tacrolimus was prescribed to 94% patients while cyclosporine 6%. No X category of 195 pDDIs were caused by tacrolimus according to Lexicomp® while 6 contraindicated category of 145 pDDIs by Micromedex. The mean of the drugs per patient was 15.78 ± 0.56. Moderate CYP3A4 enzyme inhibitors were prescribed by 28% while neither strong nor minor inhibitors or any inducers of CYP3A4 enzyme were prescribed. There were no relationship between interaction categories of the two databases and tacrolimus. D category of Lexicomp®, the total Micromedex® drug interactions and contraindicated category of Micromedex® were found in relationship with CYP3A4 moderate inhibitor presence ($p < 0.05$).
Conclusion: Tacrolimus-related potential drug-drug interactions were assessed to be highly probable. The most common pDDIs of tacrolimus seen with esomeprazole, mycophenolate mofetil and methylprednisolone. The two databases concluded different results of pDDIs categories. Several databases should be examined to identify the pDDIs in order to determine the clinically significant pDDIs. The studies which consist of clinically significant pDDIs of immunosuppressive drug regimens should be increased to rise awareness of this field.

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PP177

STUDY OF THE USE OF DALBAVANCIN FOR THE TREATMENT OF INFECTIVE ENDOCARDITIS AT HOSPITAL DISCHARGE FROM A TERTIARY CARE HOSPITAL.

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Background: Infective endocarditis (IE) is a pathology that requires prolonged administration of intravenous antibiotics. This leads to an increase in hospital stay and hospitalization costs. Long-half-life antibiotics, such as dalbavancin, given on an outpatient basis, may help reduce the number of days spent in hospital for these types of infections.
Aim: To analyze the use of ambulatory dalbavancin in patients admitted for infective endocarditis, assessing the duration of treatment, the economic amount derived from its use and the impact on the number of days of hospital stay.
Method: An observational, cross-sectional, descriptive and analytical study was conducted. All patients discharged for IE with a prescription of dalbavancin between January 1 and May 30, 2024 at a hospital of the Spanish public health system were included. Age, sex, type of endocarditis, microbiological results, days of hospital stay, duration of treatment with dalbavancin and economic amount as well as readmissions were assessed. The average cost/day of hospital stay in our hospital (€600) was taken into account to calculate the cost of hospitalization for each patient and the hypothetical cost that would have been necessary to complete the treatment in-hospital.
Results: A total of 19 patients (84.2% men) were included, with a mean age of 67.4 years. A total of 78.9% of patients were diagnosed with IE in the prosthetic valve, pacemaker or plasty, and 21.05% with IE in the native valve. 63.2% of patients had positive blood cultures, 15.8% had a positive valve culture or pacemaker, and 21% had negative cultures. The most frequently isolated microorganisms were: Staphylococcus aureus (31.6%) and S. epidermidis (21.1%). The duration of complete treatment was 6 weeks (68.4%), 8 weeks (10.52%) and suppressive treatment was used in 21.5%. The regimen used was 1500 mg at discharge, followed by 1000 mg every 2 weeks until treatment was completed. The cost of outpatient treatment for patients receiving dalbavancin for 4 weeks was €2228.95 and €3120.53 for 6 weeks. The cost of hospitalization calculated for the 19 patients was €162,600. If they had completed the treatment with hospital admission, it would have amounted to €428,400. The amount derived from the use of dalbavancin on an outpatient basis was calculated at €36,554.78. The estimated savings with this initiative were estimated at €302,354.78.
Conclusion: The use of IV dalbavancin on an outpatient basis administered every two weeks may contribute to a shorter hospital stay in patients with infective endocarditis. This initiative can be considered cost-effective, despite the cost of this antimicrobial, as it reduces the amount derived from hospitalization that would be necessary to complete the days of treatment in this pathology.

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TREATMENT ADHERENCE OF GASTROINTESTINAL CANCER PATIENTS ENROLLED IN A CLINICAL TRIAL

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Background: Adherence to clinical trial treatments in patients diagnosed with a tumour in the gastrointestinal tract is critical to improving health outcomes. Adherence to treatment protocol helps researchers collect accurate data and evaluate the effectiveness of new therapies. In addition, proper adherence can boost the chances of treatment success.
Aim: To analyse the adherence of patients with a nervous system tumour included in a clinical trial (CT).
Method: Multicentre, observational and prospective study. Patient adherence was analysed from September 2023 to February 2024 (6 months). Among the variables to be collected were: age, language, complex trial protocol, polypharmacy, number of drugs in the CT, comorbidities, history of clinical trials and adherence. Patients were contacted in cycle 2 of their treatment, considering this to be the time of greatest uncertainty in CT. Adherence was measured using the Morisky-Green 8 test (MMAS-8) and subsequently recorded by the Pharmacy Service. The project complied with the data minimisation law and the European regulation 2016/679 on personal data protection.
Results: Thirty-five patients were included in the study. 75.6% were aged between 50 and 65 years (mean 60.9 years). The main comorbidities were those related to the cardiovascular profile (18.9%) and mental health (12.4%). With regard to communication with the patient, 97.5% of the patients spoke Spanish. 81.2% of the patients had polypharmacy, of which 31.5% had several investigational drugs. 82% of patients were included in a clinical trial with daily drug administration. The mean adherence described by patients during telephone contact was high (97.7%), while that obtained by physical medication accounting was 94.3%. The main reasons for non-adherence were: forgetfulness of administration and adverse drug reaction. 39.5% reported using a method to remember their medication, with a mobile phone alarm (90.1%) being the most commonly used tool. In addition, contact with the patient was used to clarify doubts about the medication on 52.5% of occasions. The main queries were related to possible drug interactions and adverse drug reactions.
Conclusion: The patient with a tumour in the gastrointestinal tract included in a clinical trial has a high adherence to medication due to the high investment of time and personnel involved, including the Hospital Pharmacy team.

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PP179

ANALYSIS OF DESENSITIZATION PROTOCOLS USED IN ONCOLOGY PATIENTS IN A TERTIARY HOSPITAL

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Background: Drug desensitization is a procedure that allows patients to tolerate medications that previously caused hypersensitivity reactions. It is commonly applied to chemotherapy drugs and biologics. This has proven safety and effectiveness, improving clinical outcomes by enabling patients to continue preferred first-line treatments.
Aim: To describe the desensitization protocols used in a tertiary care hospital and to test whether or not the prick test result for skin allergies was related to the immediate-onset anaphylactic reactions that often occurs during infusions. We also reviewed the most frequent adverse reactions experienced with chemotherapy prior to desensitization.
Method: Retrospective observational study conducted from September 2023 to May 2024. Patients who had received a desensitization protocol, drugs involved and number of cycles were recorded. Patients who received a desensitization protocol had individualized doses and drugs were administered using serial dilutions. Each was administered at a controlled rate and time. In all cases, premedication was administered two days before and on the day of desensitization. If hypersensitivity was suspected, the allergology service previously performed a prick test to determine whether there was an intradermal reaction to the drugs administered.
Results: A total of 32 patients were analyzed, 24 women and 6 men with a median age of 60 years (IQR 66–53). The diagnoses recorded were ovarian cancer (62.5%), uterine (9.4%), lung (6.3%), prostate (6.3%), breast (3.2%), colorectal (3.2%), osteosarcoma (3.2%), Hodgkin's lymphoma (3.2%), and large cell carcinoma (3.2%). Drugs involved in desensitization protocols were paclitaxel (43.6%), carboplatin (22.9%), etoposide (9.6%), cisplatin (6.2%), oxaliplatin (4.2%), cabazitaxel (3.8%), trastuzumab (3.2%), gemcitabine (3.4%) and methotrexate (3.1%). The median number of desensitization cycles received in these patients was 5 (IQR 6–3). Skin prick tests were performed in 93.7% patients of which 33.3% were positive. The most frequent hypersensitivity reactions were abdominal, thoracic or lumbar pain (75%), erythema or reddening of the skin (62%), gastric reactions (31%), dyspnoea (25%), dizziness (18.7%), cardiovascular alterations (15.6%), sweating (15.72%), pruritus (9.3%) and loss of consciousness (3.1%).
Conclusion: Chemotherapy desensitization allows allergic patients to safely undergo treatments through carefully designed protocols and close monitoring. While it does not completely eliminate hypersensitivity risks, it significantly reduces them. Given its substantial benefits, desensitization should become the standard of care.

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EFFECTIVENESS AND SAFETY OF ATEZOLIZUMAB TOGETHER WITH CHEMOTHERAPY IN PATIENTS WITH SMALL-CELL LUNG CANCER

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Background: Atezolizumab is a monoclonal antibody against PD-L1. It has shown to improve overall survival (OS) in patients with previously treated non-small-cell lung cancer and also showed clinical benefit when combined with chemotherapy as first-line treatment of non-small-cell lung cancer.
Aim: To track overall survival and safety outcomes in patients with small-cell lung cancer treated with atezolizumab and chemotherapy as first-line therapy.
Method: Patients with histologically or cytologically confirmed small lung cancer and with measurable disease according to RECIST 1.1 criteria and with a functional status according to the Eastern Cooperative Oncology Group (ECOG) scale of 0 or 1 who had not received previous treatment were included. We followed up from the start of treatment, recording whether radiographic or clinical disease progression. Any adverse effects related to the drug that prevented continued safe infusion of the drug in the patient or the appearance of unmanageable toxicity was recorded.
Results: A retrospective observational study was performed on all patients treated with atezolizumab and chemotherapy from January 2022 to May 2024. A total of 26 patients (18 men (69.2%) and 8 women (30.8%)) with a median age of 67 years (IQR 70.5–62.5) were analyzed. Overall survival (OS) was 9.5 months (IQR 15–4.25) and progression-free survival (PFS) was 5.5 months (IQR 9.3–3). Five patients died because of the disease, 8 patients suffered disease progression during treatment, 2 discontinued treatment due to renal toxicity and 11 were still being treated at the time of analysis. The most frequent adverse reactions observed with treatment were asthenia (10), diarrhea (2), anemia (6), neutropenia (4), plateletopenia (3) and constipation (1).
Conclusion: Despite discontinuation of treatment due to death, progression and toxicity, the effectiveness data obtained in our population show a good benefit-risk ratio in these patients with advanced disease. Atezolizumab combined with chemotherapy is a treatment with a good safety profile and well tolerated by patients, which makes it a good treatment alternative.

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EFFECTIVENESS AND SAFETY ANALYSIS OF TILDRAKIZUMAB IN MODERATE-TO-SEVERE PSORIASIS

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Background: Plaque psoriasis is a chronic inflammatory skin disease with a significant impact on the quality of life of patients. Tildrakizumab is a specific interleukin-23 (IL-23) inhibitor indicated for the treatment of patients with moderate to severe plaque psoriasis.
Aim: The aim is to describe the use, effectiveness and safety of tildrakizumab in the treatment of moderate to severe psoriasis in clinical practice.
Method: Retrospective observational study conducted between March 2020 and March 2024 in a third-level hospital. The variables collected were: demographics data (sex and age), comorbidities, previous line(s) of treatment, Body Surface Area (BSA) and Psoriasis Area Severity Index (PASI) before and after treatment, start date of treatment, duration and adverse reactions (AR) recorded. Dosage was as indicated in the technical data sheet. Data was obtained from electronic prescription with the application Prisma® and electronic health records with Diraya®.

Results: Thirty-three were included, of whom thirty-one (63.3% men) had reached week 12 of treatment or more, with a median age 52 (29–72) years. The median follow-up time was 102.3 weeks. All of them received prior biologic therapy, except for one who was on apremilast treatment. The initial PASI had a median of 8.2 and after assessment at approximately 12-weeks, 48% had reached PASI 100 and 52% PASI 75. Thirteen patients reached week 28 at the time of data collection, of which 11 were with a PASI 0. The median baseline BSA was 10.7, where 13% suffered an increase, 87% a decrease, where 11 of them (35%) reached values of 0–1. Four patients (13%) discontinued treatment due to ineffectiveness, two of them switching to brodalumab, one to risankizumab and one to guselkumab. No drug-related AR were reported.
Conclusion: Tildrakizumab is a novel alternative in patients with moderate to severe psoriasis. However, due to the recent indication of this drug, more data on long-term effectiveness and safety are needed.

PP182

REAL-LIFE EXPERIENCE OF OLAPARIB AND NIRAPARIB AS MAINTENANCE THERAPY IN PATIENTS WITH OVARIAN CANCER

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Background: Poly ADP-ribose polymerase (iPARP) enzyme inhibitors have demonstrated antitumor activity in patients with serous ovarian cancer sensitive to chemotherapy based on platinum.
Aim: The aim is to evaluate the effectiveness and safety of olaparib and niraparib (iPARPs) in adult patients with ovarian cancer in clinical practice.
Method: Multicenter, retrospective observational study, included patients with high-grade epithelial ovarian cancer in response after chemotherapy based on platinum who started treatment with olaparib or niraparib between March 2018-March 2024. Data collected: age, stage of disease, BRCA mutation, response obtained with platinum, treatment initiation and duration, dose reduction, subsequent lines, dose interruptions and adverse effects (AEs) recorded. Median progression-free survival (PFS) and overall survival (OS) were used as the primary endpoint to assess effectiveness. Data were obtained from electronic medical records and the pharmacy dispensing program.
Results: 35 patients with a median age of 56 (43–80) years were included. 17 were stage III and 18 were FIGO stage IV. 19 patients received olaparib, among which 74% had BRCA II mutation, while the rest were BRCA I. The remaining received niraparib as treatment, all of them being BRCA wildtype. 49% had a complete response to chemotherapy based on platinum, while the remaining were partial responders. The median PFS was 10.1 (95% CI; 24,5–93,6) months, taking into account that 46% of the patients were still on treatment at the time of data collection. 34% suffered progression, where 2 entered a clinical trial and the rest received conventional chemotherapy based on platinum treatments in combination with other chemotherapeutic agents. 7 patients died, reaching a median OS of 17.9 months. 89% suffered some type of AE, the main ones being: asthenia (74%) nausea (52%), thrombocytopenia (42%) and anemia (23%). 25 patients interrupted treatment at some point, 17 reduced doses due to AE and four had to discontinue treatment due to hematological toxicity.
Conclusion: iPARPs are a novel alternative in patients with ovarian cancer sensitive to chemotherapy based on platinum, with good PFS data. In general, they were well tolerated in our patients although most of them presented some AE. More data on long-term effectiveness and safety are needed.

PP183

EFFECTIVENESS AND SAFETY ANALYSIS OF REGORAFENIB IN METASTATIC COLORECTAL CANCER

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Background: Regorafenib is a multikinase inhibitor indicated as monotherapy for the treatment of adult patients with metastatic colorectal cancer (mCRC) who have previously received treatment. These include oxaliplatin, irinotecan, fluoropyrimidine, an anti-VEGF and an anti-EGFR therapy. Regorafenib is an alternative in patients in whom these treatments have failed.
Aim: The main aim was to assess the effectiveness and toxicity outcomes of regorafenib in our local clinic practice. Patients were considered eligible for this analysis if they had confirmed mCRC; received fluoropyrimidine, and anti-VEGF or anti-EGFR therapy.
Method: Retrospective observational study of regorafenib in patients with mCRC from December 2012 to March 2024. The primary endpoints were overall survival (OS) and progression-free survival (PFS). Furthermore, other variables were collected, such as age, sex, cancer type (colon or rectal), KRAS mutation, previous treatments, duration, dose reduction and any side adverse effects (AE) registered. The data collected were obtained using Prisma® and Diraya® software.
Results: Ninety-two patients (73 men, 19 women) with a median age 66 years (range 38–80) were included. 48% were diagnosed with colon cancer and the remaining 52% with rectal cancer. 50% had a KRAS mutation. The median number of prior lines of treatment was 3 (range 2–6) and they received a median number of regorafenib cycles of 3 (range 1–15). The median PFS was 2.8 months, taking into account that 3 of the patients were still on treatment at the time of data collection. Seventy-five patients achieved an OS of 7.8 months. 93% suffered some type of AE, the main ones being: asthenia (48%), hand-foot syndrome (37%), diarrhea (20%), arterial hypertension (12%) and mucositis (11%). 33 patients (36%) underwent dose reductions due to AE, 9 of whom had to discontinue treatment due to toxicity.
Conclusion: Regorafenib is an alternative in patients with metastatic colorectal cancer, although PFS and OS are not very high. However, adverse events are very common, demonstrating that regorafenib is poorly tolerated.

PP185

DAYS OF THERAPY (DOT) AS A USEFUL TOOL TO MEASURE ANTIBIOTIC CONSUMPTION: EXPERIENCE FROM A PORTUGUESE HOSPITAL.

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Background: Stewardship programs are crucial in the fight against antimicrobial resistance. Days of Therapy are indicators that can guide the strategies to be implemented. In the hospital of the present study, these tools were used to understand the current data.
Aim: The aim of the present study is to assess the evolution of antibiotic consumption in pediatric inpatients at a general hospital. This study provides an overview of the systemic use of antibacterials defined in DOTs and according to the Anatomical Therapeutic Chemical (ATC) classification adopted by the WHO.
Method: Observational, retrospective study in a versatile private hospital. The record of antibiotic consumption in pediatric inpatients between 2021 and 2023 was consulted. Through the electronic clinical process, it was possible to extract antibiotic prescription data from January 1, 2021, to December 31, 2023, for inpatients in the specialties: neonatology, pediatrics, and pediatric surgery, using an Oracle SQL-developed database. According to the hospitalization episode for each patient, DOTs per 100 patient days were calculated, by internal convention. From the collected data, the number of DOTs per antibiotic class was analyzed according to the ATC classification.
Results: Analyzing the obtained data, it is observed that over the last three years, the absolute number of DOTs in pediatric inpatients was 1805 DOTs in 2021, 2659 DOTs in 2022, and 3445 DOTs in 2023. Regarding the number of hospitalizations, there were 3138 PD in 2021, 4418 PD in 2022, and 6337 PD in 2023. Concerning the DOT/100PD rate, it was 57.5 DOT/100PD in 2021, 60.2 DOT/100PD in 2022, and 54.4 DOT/100PD in 2023. It was observed with this study a 6% reduction in the DOT/100 PD rate over a three-year period. Through the three years of data analysed the number of PD increased 100% as well as the number of DOTs (a 90% increase). The collected data regarding the antibiotic class (ATC classification) in DOT/100PD are as follows:
Penicillins and derivatives (J01C): 13.2 (2021); 17.3 (2022); 18 (2023)
Cephalosporins (J01DB/C/D/E): 20 (2021); 0.6 (2022); 0.2 (2023)
Glycopeptides (J01XA): 0.7 (2021); 0.3 (2022); 1.3 (2023)
Quinolones (J01M): 0.1 (2021); 0.4 (2022); 0.1 (2023)
Aminoglycosides (J01G): 7.8 (2021); 6.4 (2022); 5 (2023)
Macrolides (J01FA): 1.1 (2021); 0.7 (2022); 0.8 (2023)
Clindamycin (J01FF): 3.9 (2021); 6.6 (2022); 6.6 (2023)
Conclusion: The importance of evaluating this data lies in the relevance of assessing prescription trends that may dictate stewardship measures and even evaluate measures already implemented. Analyzing the assessment of the number of DOTs per antibiotic class, we verify that these data, far beyond showing us the prescription trend, are very important to evaluate measures implemented by the Stewardship Program for the future. In conclusion, rationalizing the use of antibiotics in pediatrics is essential for evaluating the activity of antibiotic stewardship programs in hospitals.

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PP187

GENERAL PRACTICE PRESCRIBING PATTERNS AND ANTIBIOTIC USE IN NORTHERN IRELAND

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Background: Antimicrobial resistance (AMR) is projected to cause 10 million deaths worldwide by 2050. Northern Ireland (NI) has the highest rate of antimicrobial prescribing in the UK with 80% of antimicrobials prescribed in primary care. This study investigates prescribing patterns of GPs across NI, their opinions of AMR and the impact this has on tacking AMR in NI.
Aim: Determine the prescribing patterns of antimicrobials by GPs in NI and compare with available data from previous studies to establish if there is a link between GP prescribing patterns and AMR.
Method: Sixty general practitioner (GP) practices throughout NI received an online questionnaire developed in this study. Prescribing data was gathered from the Business Services Organisation (BSO) in order to compare with GP responses and to examine how the COVID-19 pandemic has impacted antibiotic prescribing rates in NI. Data was inputted into Microsoft Office Excel and statistical tests were ran on IMB SPSS Statistics 27.
Results: A response rate of 25% for the questionnaire was achieved. The most commonly prescribed antibiotic in NI was the broad-spectrum antibiotic amoxicillin. The most common indication that GPs prescribed antibiotics for was urinary tract infections (UTI) (53%), followed by upper respiratory tract infections (URTI) (20%) of which over 80% are caused by viral infections. GPs feel a significant pressure from patients to prescribe antibiotics when they are not clinically necessary, with 73% of GPs experiencing this "often" or "very often". 86% of GPs strongly believe that the public require a greater awareness of AMR, however only 60% of GPs correctly identified the definition of AMR. There was a reduction in antibiotic prescribing for 8 of the 10 antibiotics investigated in this study between 2019, 2020 and 2021.
Conclusion: Based on the findings of this study it is proposed that there is a public campaign to raise more awareness of AMR, GPs receive greater support with regards to antibiotic prescribing and more research is carried out investigating the impact remote consultations have an antibiotic prescribing patterns and AMR.

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PP188

A QUALITATIVE STUDY EXPLORING THE BREAKDOWN IN TRUST OF CAREGIVERS IN CHILD AND ADOLESCENT PSYCHIATRY SERVICES AND MEDICATION USE

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Background: There has been widespread media commentary associated with Child and Adult Mental Health Services (CAMHS) in Ireland. This is in part due to a regional CAMHS centre look-back review (South Kerry, Ireland) with the associated publication of the Maskey Report (MR) which highlighted unreliable diagnoses and inappropriate psychotropic medication prescribing.(1).
Aim: The aim of this study is to explore the impact of the MR on trust levels of caregivers of youths currently or previously attending CAMHS in Ireland. The findings could potentially be used to help provide recommendations for the improvement of CAMHS in the future.
Method: This study was qualitative in design using a combination of an online survey free-text responses and semi-structured focus groups and interviews. Topics included caregivers' perceptions of CAMHS, the impact of the MR, caregivers' personal experience of CAMHS including access, therapeutic interventions, infrastructure, staffing, resources, and clinical competence. The researchers utilised an iterative approach to explore emerging themes and delve deeper into topics of significance. A thematic analysis approach was then used, resulting in a full coding system descriptive of the collective experience of caregivers of youth attending CAMHS in Ireland.
Results: There were 236 respondents to the online survey. Three focus groups and ten semi-structured interviews took place. In terms of caregivers' perceptions of CAMHS post MR, themes included anger, broken trust, and lack of confidence in both the service and in prescribing/monitoring of medication. Factors contributing to these perceptions included broken promises, lack of empathy, poor communication/listening, insufficient follow-up, lack of holistic and patient-centred care, difficulties accessing CAMHS and poor of continuity of staff. Suggestions for restoring trust in CAMHS included improved communication/listening, administration systems and continuity of staff, reformed governance/oversight, and reduced medication prescribing with increased holistic/patient-centred care. Many caregivers agreed that a dedicated CAMHS pharmacist could improve trust levels in prescribed medication.
Conclusion: Lack of trust between families and practitioners can lead to suboptimal health outcomes. Hence, given recent controversies surrounding CAMHS, diverse research must be conducted to examine mechanisms to restore trust in both the service and treatments offered. This study on the breakdown and rebuilding of trust in CAMHS endeavoured to allow the voices of caregivers to be heard. To restore trust and move forward with an improved and sustainable CAMHS model, the perspectives and views of all service users should be considered in future CAMHS service planning.

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PP189

KNOWLEDGE AND AWARENESS OF CELIAC DISEASE AND GLUTEN SENSITIVITY AMONG THE PUBLIC: A CROSS-SECTIONAL STUDY

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Background: Celiac disease (CD) is a chronic immune-mediated inflammatory disease of the small intestine [1]. Assessing public knowledge and awareness is crucial for effectively allocating resources and designing and implementing targeted education campaigns, screening, prevention, and treatment strategies of CD [2].
Aim: To assess the knowledge and awareness of gluten sensitivity (GS) and celiac disease, its complications and social life impact among the public in Istanbul, Türkiye.
Method: This was a descriptive, cross-sectional study conducted among Turkish community in Istanbul, Türkiye using a structured, validated questionnaire to assess knowledge and awareness of gluten sensitivity (GS) and celiac disease, its complications and social life impact. Data analysis was carried out using Microsoft Office Excel 2013 and the Statistical Package for the Social Science (SPSS) software for Windows version 23.0. Number and percentage were employed to convey categorical data, whereas the mean, standard deviation, and median range were used to express numerical variables.
Results: A total of 64 participants were enrolled with a mean age of 40.0 ± 9.8 years and 84.4% were female. The majority of the participants (82.8%) had a university degree. GS/CD was present in 7.8% participants. A family history of GS/CD was reported by 4.7% participants. Additionally, 93.8% of the participants had heard of gluten sensitivity or celiac disease. The mean scores for domains of questionnaire, GS/CD general knowledge was 1.97 ± 0.45, GS/CD symptoms and complications was 2.20 ± 0.38, knowledge on nutrition of GS/CD was 2.28 ± 0.25, effect of GS/CD on daily and social life quality was 1.91 ± 0.32, knowledge and awareness of gluten-free market was 2.21 ± 0.37.
Conclusion: Public knowledge and awareness about GS/CD are at a poor level. Thus, interventions in areas with poorer educational outcomes should be given priority, as should providing health literacy interventions to increase the knowledge and awareness of CD among the general community.

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PP190

EVALUATION OF UNIVERSITY STUDENTS' THALASSEMIA DISEASE KNOWLEDGE AND AWARENESS:

A CROSS-SECTIONAL STUDY

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Background: Thalassemia (TH) is an inherited autosomal blood disorder [1]. Earlier literature showed that TH education can be effective strategy for TH prevention within the current societal

context, particularly health related students who are a highly educated segment of society and will be the healthcare professionals of the future.

Aim: To evaluate the knowledge and awareness of TH disease and complications among pharmacy university students in Istanbul, Türkiye.

Method: A descriptive, cross-sectional study conducted among pharmacy students in, Istanbul, Türkiye using a structured, validated questionnaire to assess the knowledge and awareness of TH disease, screening, clinical features, and general management. The questionnaire was reviewed for face and content validity, pilot tested and then administered to a sample in Istanbul. Data analysis was carried out using Microsoft Office Excel 2013 and the Statistical Package for the Social Science (SPSS) software for Windows version 23.0. Number data, whereas the mean, standard deviation, and median range were used to express numerical variables.

Results: The study included 131 participants with a mean age of 22.8 ± 2.6 years, of whom 80.9% were females. Regarding academic year, 35.9% of the participants were in years 1, 2, or 3, and 64.1% were in years 4 or 5. Among them, 92.4% reported the presence of thalassemia disease. 89.3% of the participants had a family history of thalassemia. 29.8% of the participants had never heard of thalassemia. Regarding the source of their knowledge about thalassemia, 56.5%, 13.0%, and 20.6% learned from the internet, books, and academic literature, respectively. TH knowledge, TH screening knowledge was 2.59 ± 0.2, TH disease symptoms was, TH complications was 2.17 ± 0.32 and knowledge on TH treatment 2.32 ± 0.33.

Conclusion: University pharmacy students reported low level of TH disease knowledge and awareness. Consequently, educational programs in areas with poor knowledge and awareness should be prioritised among pharmacy students.

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PP191

ADDRESSING OSTEOPOROSIS IN ROMANIAN PATIENTS: PRELIMINARY RESULTS FROM AN IN-PERSON SURVEY

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Background: Given the high prevalence of fragility fractures in Europe, osteoporosis represents a major health problem, requiring substantial annual healthcare costs. Romania belongs to the group of European countries where osteoporosis is underdiagnosis [1], a significant proportion of individuals at high risk of fractures not receiving appropriate therapy [2].

Aim: Therefore, our study assessed patient's knowledge and awareness of osteoporosis, as well as their general health behavior. It aimed to determine the extent to which the DXA test is used both as a preventive and as a diagnostic measure, as well as to identify the presence or absence of treatment in patients who have reported a diagnosis of osteoporosis**.**

Method: A questionnaire consisting of 31 items was developed and subsequently validated. The questionnaire was distributed in several pharmacies of 4 Romanian counties (i.e., Arad, Timis, Caras-Severin and Olt), in both urban and rural areas, between February 1, 2023, and April 30, 2023. The survey targeted male and female individuals over 40 years old able to provide the following: socio-demographic data, the level of knowledge about osteoporosis and its risk factors, the main sources of information, comorbidities, prevention practices and lifestyle. Additionally, the questionnaire sought to identify participants with osteoporosis diagnosis and type of treatment.

Results: 189 questionnaires were collected, and preliminary data analysis revealed the following: 79% of the participants were female (21% male), 69% being from urban areas (31% from rural areas). The main sources of information regarding osteoporosis were reported to came from social networks (27%), physician (26%) and family/friends (25%). In terms of scores on the knowledge assessment questions, participants in the 50–59 age group had the highest average number of correct answers (9.12 ± 1.71), indicating the highest level of knowledge about osteoporosis. Despite of a good level of knowledge about osteoporosis among all survey respondents (9.01 ± 0.15), DXA test was performed by only 23% of participants. Most DXA tests were recorded among subjects aged 60–69 (51%) and female subjects (91%). Although 15% of participants reported having a diagnosis of osteoporosis (the highest number of osteoporosis cases being in the 60–69 age group—57% of cases), 43% of them were not receiving treatment. Moreover, 26% of respondents have suffered at least one fracture in their lifetime, and 24% have experienced recent falls.

Conclusion: The preliminary analysis revealed that, although Romanian patients have a high level of knowledge about osteoporosis, the DXA test remains underused and thus, osteoporosis continues to be poorly diagnosed among the Romanian population. Furthermore, this study highlights the significant issue of patients not receiving treatment despite being diagnosed with osteoporosis. The significant percentage of participants who have suffered falls and fractures serves as a warning signal for the Romanian healthcare system, underscoring the need for urgent preventive measures.

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EVALUATION OF NEONATAL INTENSIVE CARE UNIT HEALTH PROFESSIONALS' KNOWLEDGE REGARDING HIGH-ALERT MEDICATIONS

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Background: Owing to their possible serious adverse effects, it is imperative for healthcare professionals to have sufficient and up-to-date knowledge about high-alert medications. Neonates are among the most sensitive populations with increasing treatment complexity and high-alert medication use in intensive care settings.
Aim: This study aimed to evaluate the level of knowledge of neonatal intensive care unit healthcare professionals regarding high-alert medications.
Method: This descriptive cross-sectional study was conducted between January and May 2024 through an online survey administered to neonatal intensive care unit healthcare professionals. Knowledge levels of healthcare professionals regarding high-alert medications measured by the Turkish adaptation of High-Alert Medications (HAM) Questionnaire (Öztürk et al., 2022)[1].
Results: Among 180 healthcare professionals responding to the study, 85% were females. The professions of the participants were physician (28%), nurse (70%), midwife (1.5%), and paramedic (0.5%). Nearly half of the participants had a bachelor's degree (44%), and 30% had postgraduate education. The mean years spent in their profession was 11.67 ± 8.48, and the mean total score of the HAM Questionnaire was calculated as 70.31 ± 14.38. A statistically significant correlation was found between the HAM Questionnaire score and years spent on profession ($R^2 = 0.331$; $p < 0.001$).
Conclusion: The study's findings indicate that the majority of neonatal intensive care unit healthcare professionals possess substantial knowledge about high-alert drugs. However, given the vulnerable population they serve, it is crucial to continuously improve and update this knowledge.

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PP193

EVALUATION OF PARENTS' KNOWLEDGE REGARDING PEDIATRIC ORAL ANTIBIOTIC SUSPENSIONS

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Background: Antibiotics in suspension form are one of the most prescribed medication groups in pediatrics. Due to stability issues, antibiotic suspensions are produced as powders to be reconstituted at home. Implementing an impactful education method is crucial to maximizing treatment effectiveness.
Aim: This study aimed to evaluate parents' knowledge about oral antibiotic suspensions and the contribution of education mediated by written and audiovisual materials.
Method: The study was conducted between March and May 2023, with parents aged 18 and over who visited a community pharmacy to purchase pediatric antibiotic medication in oral suspension form. A survey was created reviewing the instructions for pediatric oral suspensions and similar studies in the literature. The researchers designed an educational brochure and video using drug information leaflets with the consultation of a visual communication designer. The score of the survey was the main outcome measure. After the face-to-face survey, the participants received an education through the brochure and a video, and the survey was repeated over the phone the next day.
Results: The study included 95 parents (81 female), and the mean age was 36.27 ± 6.61. Most had a prescription for amoxicillin and clavulanic acid when visiting the pharmacy. The internal consistency of the survey was evaluated with the Kuder-Richardson-20 (KR-20) coefficient, and the survey had an internal consistency of 0.729 (KR-20). A paired t-test was used to assess the discrepancies between interviews and before education; the mean of correctly answered questions was 5.78 ± 2.75. After education, this value is increased to 10.18 ± 1.68, with a statistically significant difference ($p < 0.001$).
Conclusion: Many parents who come to the pharmacy with a prescription for antibiotics in the form of pediatric oral suspension are not aware of how to properly prepare and store them and manage the remaining medication. However, using written and audiovisual materials for educational purposes can effectively increase parents' knowledge in this area, and pharmacists can benefit from these materials in patient education.
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COLLABORATION IN PRIMARY SCHOOL HEALTH EDUCATION: TEACHERS AND PARENTS VIEWS ON SELF-CARE AND MINOR AILMENTS.

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Background: Early childhood education and care is crucial in shaping a child's life chances and determining health behaviours through life (1). It focuses on the holistic development of a child's social, emotional, cognitive, and physical needs to build a solid foundation for lifelong learning and well-being (2).
Aim: This research delves into the perspectives of parents and teachers on the teaching of self-care and the management of minor ailments within primary schools in the UK and explores the roles that pharmacists can play within this.
Method: Qualitative semi-structured interviews gathered detailed insights into individual experiences and opinions. Interviews were recorded, transcribed, and analysed using Nvivo 12 to identify themes.
Results: A total of 18 participants; teaching professionals and parents took part. Results reveal six overarching themes: varying attitudes towards health, broad understanding of self-care, responsibility of schools in health education, notable gaps and barriers in current education practices, division of educational responsibility between parents and teachers, and the potential positive impact of comprehensive health education. The study suggests that while children are aware of basic health awareness, structured education is needed for managing minor ailments, requiring training and support. The pharmacy workforce can play a crucial role in developing and delivering a program of health education.
Conclusion: Comprehensive education on self-care and minor ailments within the primary school curriculum could lead to better

health management among children, improved school attendance, and long-term benefits to public health. Policy development and educational reforms that support the inclusion of health management education in primary schooling are advocated, underscoring the importance of collaboration between homes and schools to foster self-reliant and health-conscious future generations.

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EXPLORING SELF-CARE EDUCATION IN UK PRIMARY SCHOOLS: A SCOPING REVIEW (2010–2023)

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Background: Self-care and minor ailment education in primary schools is vital for public health. However, the content of such programs in UK are not well documented. Understanding how these topics are taught is key to assessing current practices and finding areas for improvement in school based health education.
Aim: This review examines educational resources, programs, and literature on self-care and minor ailments for children in the United Kingdom (UK) from 2010 to 2023 to identify key themes and research gaps.
Method: We employed the Joanna Briggs Institute (JBI) methodology to conduct the study. The search strategy encompassed MEDLINE, Embase, Social Policy and Practice, and EBSCO Education, focusing on studies published between 2010 and 2023 in English. Inclusion criteria covered studies centered on self-care education for primary school-aged children (4 to 11 years) in the UK. Studies focusing on older age groups, complex illnesses, or contexts outside the UK were excluded. Data extraction was conducted by two independent reviewers, resolving discrepancies through discussion.
Results: Out of 770 studies identified, 73 met the inclusion criteria. Eight key themes emerged: health literacy, self-awareness, physical activity, healthy eating, risk avoidance, good hygiene, rational use of products, and managing minor illnesses. The review revealed a variety of approaches to self-care education across schools and highlighted a significant research gap in assessing the long-term impact of self-care education on children's health behaviors. Teaching methods varied, with some using traditional classroom lectures, while others employed interactive workshops. Despite the diversity of approaches, there was a lack of standardization and significant variation in content depth. Studies showed a generally positive impact on children's health behaviors, but long-term effects and outcomes remained unclear. Gaps included limited research on culturally sensitive materials and studies on diverse or marginalized groups.
Conclusion: The scoping review revealed significant variability in how self-care education is delivered in primary schools, with inconsistent content and methods. While early self-care education can positively impact health behaviors, a lack of standardization and long-term outcome studies suggests a need for more comprehensive research. This review underscores the importance of consistent and inclusive self-care education for primary school-aged children to promote long-term health and well-being.
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EFFECTIVENESS OF VACCINATION AGAINST SARS-COV-2 IN ONCO-HAEMATOLOGICAL PATIENTS

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Background: To determine the effectiveness of vaccination against SARS-CoV-2 (measured by total antibody titers against the anti-spike, anti-S) in oncohematological patients on active treatment or who have received a B cell depleting therapy in the last 6 months.
Aim: Age, sex, oncohematological disorders, chemotherapy regimen, number of doses of vaccines administered, type of vaccines received, serology for IgG anti-Spike of SARS-CoV-2, time since the last vaccine received and serological determination. A positive result (seroconversion) was defined by antibody titer against protein S greater than 260 BAU/ml.
Method: Descriptive, observational, retrospective, single-center study of 12 months (January-December 2022). Patients with hematologic malignancies aged $\geq$ 18 years on active treatment or who have received a B cell depleting therapy in the last 6 months, with a complete vaccination regimen at the time of antibody quantification, were included. Complete vaccination against SARS-CoV-2 was defined with two doses of the Comirnaty® of Pfizer-BioNTech, Spikevax® of Moderna, or Vaxzevria® of Astrazeneca vaccines; or one dose of the Jcovden® of Johnson & Johnson vaccine; and with at least one booster dose after full vaccination.
Results: 148 patients were included (88 male) with a mean age of 70.98 $\pm$ 12.57 years. 66.2% presented seroconversion while the remaining 33.8% presented an average of 28.7 BAU/ml in antibody titer against protein S, finding statistically significant differences in relation to the presence of a B cell depleting, CAR-T and Bruton tyrosine kinase inhibitors therapeutic scheme; and the time between the last dose of vaccination received (< 5 months) and serological measurement ($p < 0.001$). There were no statistically significant differences between antibody titer and age (> 65 years), number of vaccine doses(3 or 4) and type of vaccines received.
Conclusion: Oncohaematological patients have a reduced seroconversion rate, related to therapy administered. It is necessary to establish priorities in relation to the promotion of vaccination against SARS-CoV-2 to reduce the risk of serious infection among these patients.

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INFORMAL PRESCRIBING PRACTICES BY DUTCH PHARMACISTS AND THEIR VIEWS ON POTENTIAL PRESCRIBING AUTHORITY: A NATIONWIDE SURVEY

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Background: In some countries, pharmacists have been granted prescribing authority to enhance healthcare quality and accessibility. In others, informal prescribing practices may already be in place, potentially paving the way for formal legislation.
Aim: This study investigated Dutch pharmacists' perspectives on introducing prescribing authority in light of their current informal practices.
Method: An online nationwide cross-sectional quantitative survey study was conducted among practicing pharmacists in the Netherlands. A questionnaire was developed in Qualtrics to investigate current informal prescribing practices, whether participants would want to have prescribing authority for these practices and their readiness to use prescribing authority. The questionnaire was piloted among pharmacists from different healthcare settings. Pharmacists were recruited through national professional networks via e-mail, newsletters and LinkedIn during the period of April and May 2024. Data were analysed with descriptive statistics.
Results: Of the 476 respondents, 66.6% (n = 317) had over ten years of working experience. The majority (76.7%; n = 365) worked in community pharmacy, 14.7% (n = 70) in inpatient hospital pharmacy, 4.0% (n = 19) in outpatient hospital pharmacy and 4.6% (n = 22) in other or combined settings. The most common informal practices included processing clinical decision rules (81.1%; n = 386), therapeutic substitution in case of drug shortages, biosimilars and/or local formularies (79.6%; n = 379), and renewing prescriptions (70.6%; n = 336). Almost all respondents (98.1%; n = 467) favoured official prescribing rights for at least one of these practices. Readiness to use prescribing authority was reported by 96.4% (n = 352) of those working in community pharmacy, 72.9% (n = 51) in inpatient hospital pharmacy, 94.7% (n = 18) in outpatient hospital pharmacy and 90.9% (n = 20) in other or combined settings.
Conclusion: The majority of Dutch pharmacists engage in informal prescribing and support formal prescribing authority, suggesting readiness for legislative changes that could improve healthcare delivery. These findings may support policy makers in future decisions regarding the potential introduction of pharmacist prescribing legislation.
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DEFINING HIGH ALERT MEDICATIONS IN AN OUTPATIENT DRUG DISPENSATION UNIT: DESCRIPTION OF AN ANALYSIS APPROACH

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Background: Hospital retrocession consists of a drug dispensation unit for outpatients and gathers a list of medications that have to be only given at the hospital defined by ministerial order. With an average of 130 outpatients daily coming in our pharmacy, there is a need to secure this activity.
Aim: The purpose of the study is to introduce the method resulting in the High Alert Medications' (HAMs) list in order to secure the pharmaceutical supply chain in this unit and enhance iatrogenic prevention.
Method: Institute for Safe Medication Practices (ISMP) and French Health High Authority criteria were reviewed from November 2023 to April 2024 to define drug class referring to it (cytotoxics, narcotics, insulin) within the drug formulary of the unit. Then a Failure Mode, Effects & Criticality Analysis (FMECA) method was conducted to assess the inherent risk of each identified drug (occurrence, severity, detection) compared to the active list of patients of 2023.
Results: Among the 246 reference formulary, 9 of them were selected for the 1st step belonging to the following class associated with their corresponding number of patients: oral chemotherapies and immunosuppressants (Temozolomide TMZ [134], Lomustine CCNU [181], Lenalidomide [143], Pomalidomide [48], Thalidomide [9]), antimetabolite (oral solution of Methotrexate MTX [2]), insulin (HUMULIN [1]) and narcotics (Dexamphetamine [13], Sodium Oxybate [63]) for whom the FMECA shows a criticality ranging from 5 to 10. After discussing these results with the team, 2 drugs were removed from this list (HUMULIN and MTX both compassionate use) as they only treat one to two patients. To secure dispensing and storage, a robot has been installed. Concerning patient administration pharmaceutical interviews (PI) have been implemented for TMZ and CCNU.
Conclusion: We identified a HAMs list which will evolve depending on the unit activity as compassionate use drugs are in a constant evolution. To broaden the scope of this work, we need to display this list on the unit, to spread prescription decision tools to improve the nursing staff training, to extend PI to other anticancers and to set up a prospective data collection of nonconformities to assess the place of HAMs among them.
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PP199

EVALUATION OF UNIVERSITY STUDENTS' DOWN SYNDROME DISEASE KNOWLEDGE AND AWARENESS: A CROSS-SECTIONAL STUDY

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Background: Down syndrome (DS) is the most common genomic disorder of intellectual disabilities [1]. Research has shown that those with higher levels of education have positive views and attitudes about individuals with DS. Medical and health sciences students are a highly educated segment of society and will be the healthcare professionals of the future [2].
Aim: To evaluate the awareness and knowledge of DS among senior pharmacy university students in Istanbul, Türkiye.
Method: This was a descriptive, cross-sectional study conducted among senior pharmacy students in Istanbul, Türkiye using a structured, validated questionnaire to assess the awareness and knowledge of DS disease, screening, clinical features, and general management. Data analysis was carried out using Microsoft Office Excel 2013 and the Statistical Package for the Social Science (SPSS) software for Windows version 23.0. Number and percentage were employed to convey categorical data, whereas the mean, standard deviation, and median range were used to express numerical variables.
Results: A total of 65 pharmacy students were included, with an average age of 22.68 ± 1.9 years. The majority of the participants were female students (80%), learned about DS from family members, friends or relatives (32%), and followed by books and literature (26%). The mean knowledge score regarding DS disease was 4.98 ± 1.9, DS screening methods was 2.34 ± 1.0. Meanwhile, the mean awareness score regarding DS clinical features was 3.9 ± 1.4, and the mean knowledge score regarding DS management was 5.48 ± 2.1.
Conclusion: University pharmacy students reported low level of DS' disease awareness and knowledge regarding different domains, particularly about screening methods and clinical features. However, the participants reported acceptable level of knowledge about DS management.

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PP200

IMPORTANCE AND NECESSITY OF PHARMACISTS IN INFORMING PUBLIC ABOUT INFECTIOUS DISEASES: A CROSS-SECTIONAL STUDY

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Background: In the contemporary world, the global propagation of novel infectious diseases is a significant possibility, as seen during COVID 19 pandemic [1]. Since the awareness and knowledge level of each individual is not equal, and this threatens all the World, it is necessary to measure the knowledge levels of individuals and to plan accordingly [2].
Aim: The aim of this study was to determine the risk awareness of participants regarding infectious diseases, to measure the protection level of individuals from communicable diseases and to investigate how a pharmacist should approach this attitude and take precautions.
Method: This study was conducted between 15–22 January 2024, on the individuals from all around Turkey, over the age of 18 and not having infectious disease at the time of enrolment. Communicable Diseases Risk Awareness and Protection Scale (CDRAPS) and additional questions were applied via Google forms (survey link was shared via social media platforms). Sociodemographic data of participants, infectious diseases that participants lack knowledge about, patient training methods preferred by the participants and CDRAPS were assessed. Descriptive statistical analyzes were performed using the SPSS 22.0 program to analyze the data.
Results: 128 participants with a mean age of 36.5 ± 2.32 were participated in the study. 85 (66%) of them were female and 69 (54%) participants got bachelor degree. 84 (66%) of the participators have had an infectious disease before and Covid-19 (37%) and influenza (33%) were among the diseases that the participants were most frequently exposed to. 64 (50%) of the participators have never had a training about infectious diseases before and only 15 (12%) of the participators got training from the pharmacist. More than two-thirds of respondents (78%) declared that they would like to receive training from a pharmacist. Participants mostly felt uninformed about HIV (34%), influenza (16%) and sexually transmitted diseases (14%) and wished to get training about. Written and oral training combination was the most preferred training type (52%). The mean CDRAPS score of the participants was 147.02 ± 17.91. Participants got the highest score (33.91 ± 4.24) from personal protection awareness subscale and lowest score (13.57 ± 1.75) from hand washing behaviors subscale.
Conclusion: It was shown that the participants' risk awareness and protection levels were not sufficient. Taking into account that contagious diseases can be prevented if necessary precautions are taken, and otherwise they spread and threaten the society, importance of educating the public, mainly about contamination and protection methods is obvious. Considering pharmacists' responsibilities and importance not only for the patient but also for the public and World health, it is important and necessary that pharmacists educate patients about infectious diseases.

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IDENTIFICATION OF OUTCOMES IN COMPUTERIZED PHYSICIAN ORDER ENTRY (CPOE) EVALUATION STUDIES: A RAPID REVIEW

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Background: Computerized physician order entry (CPOE) systems are increasingly implemented to digitise medication orders. To assess their impact and improve their use, implementations and enhancements of CPOE are often accompanied by an evaluation study. To generalize these findings across different evaluation studies, comparable outcomes are necessary.
Aim: In a rapid review we aimed to identify outcomes reported in CPOE evaluation studies. This systematic literature search is the first step in the development of a core outcome set (COS) on the evaluation of CPOE systems. The purpose of this COS is to enable reporting of comparable outcomes by using it as a common foundation in future CPOE evaluation studies.
Method: In this systematic search in Pubmed and Embase we identified CPOE evaluation studies published between 2003 and 2023 in English or German language. Studies evaluating the implementation, routine use, or improvement of a CPOE system for inpatient medication orders were included. We excluded studies evaluating other health-IT software or other CPOE functions than medication orders, articles describing CPOE systems without outcome evaluation, or opinion papers and commentaries. After duplicate removal, all titles and abstracts were screened. For the currently ongoing full text screening and data extraction we use a validated data saturation method [1].
Results: The systematic search yielded 6223 studies. After duplicate removal, 4833 titles and abstracts were screened whereof 1816 studies were included for full text screening. Based on an algorithm-based simulation in R [1], after extracting 100 randomly selected full texts, we estimate to need to extract another 25 to 175 articles to reach data saturation of 99%. Besides identifying the reported outcomes, outcome definitions, measurement methods, type of intervention, and information on study design are extracted. The final results of this literature search, including the identified outcomes will be available by the time of the symposium.
Conclusion: By deploying the whole range of outcomes reported in CPOE evaluation studies, we intend this rapid review to cover all important areas of CPOE evaluation for medication orders. The results will serve as a basis for the development of a COS for the evaluation of ordering medication through CPOE systems.

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PP204

TRANSPLANT PHARMACISTS' CONTRIBUTION TO DEVELOPING ALLOPHONE PATIENT EDUCATION TOOLS: A SEMI-STRUCTURED STUDY

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Background: In the context of solid organ transplantation, lack of adherence can lead to acute graft rejection. Individual patient education aims to help them manage their regimen. The case of an illiterate deaf-mute kidney recipient has led us to think about developing tools meant to be understandable by any patient.
Aim: As we faced the case of a non-French speaker mute patient, the scope of the study was to assess already existing tools and if applicable, create patient education tools for allophone, deaf or mute people.
Method: We conducted a first face-to-face structured interview with a sign language interpreter in March 2024. It tackled immunosuppressants' indication, posology, drug monitoring, adverse events, forgetfulness, vomiting, infection signs, sun-health education and self-medication. A medication-related action plan completed with illustration boards were presented. The two following semi-structured interviews were held in April with caregivers of a mute patient. They checked his knowledge and improved our tools with his feedback. After 3 sessions, the patient was asked to rephrase what he learnt to ensure correct understanding and identify ongoing knowledge gap.
Results: We transformed our medication plan into a more pictured one: less words; pictures of pills, boxes, along a 24H timeline going from morning to evening gathering drugs intake sequentially. No words were included except medications' names and dosage. We added clocks to help the patient indicate its proper schedules for meals and drug intake. The main difficulty was to find images representing what expected: for example, choosing a «coffee and croissant» picture was first misperceived as a prohibition of eating fat and sweet instead of embodying breakfast. Pictures illustrating risks due to sun exposure or recognition of infection signs were understandable enough. Nevertheless, communication remained difficult despite adapted tools: the patient had to know about the concept of telling the time while he might have a linear or circular vision of it. There is also a gap between regular hospital schedules and real lifestyle for which therapeutic education can help. This work could not have been set up without the help of deaf language professionals.
Conclusion: Increase of communication difficulty should not be an obstacle to transplantation. Patient education tools must be minimalistic and accurately convey medical information. It must be interactive to allow the patient developing self-management skills. This works presents a first approach of how to design comprehensive educative tools for patients with difficulties to communicate. However, it was designed with the help of only a mute patient so it must be validated with others.
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