International Journal of Clinical Pharmacy (2023) 45:789–799
https://doi.org/10.1007/s11096-023-01599-5

CONFERENCE ABSTRACTS

ESCP Spring Workshop 2023: Advancing clinical pharmacy and care in diabetes and cardiovascular comorbidities—Antwerp, 20–21 April 2023

Oral Communications

OR01.1 Pharmacist-led personalisation of antiplatelet therapy and outcomes after percutaneous coronary intervention

R. Formosa[1], F. Wirth[1,*], R. G. Xuereb[2], L. M. Azzopardi[1]

[1]Department of Pharmacy, Faculty of Medicine and Surgery, University of Malta; [2]Department of Cardiology, Mater Dei Hospital, Msida, Malta

Background and Objective: Antithrombotic therapy prescribing after percutaneous coronary intervention (PCI) is challenging and requires consideration of bleeding and ischaemic risk. The aims were to assess bleeding risk, optimise antithrombotic therapy prescribing and evaluate outcomes in patients undergoing PCI.
Setting and Method: This prospective cohort study was undertaken at the Cardiac Catheterisation Suite of an acute general hospital. Patients undergoing PCI and candidates for dual antiplatelet therapy (DAPT) were prospectively recruited by convenience sampling after ethics approval. A data collection sheet was developed, validated and completed via patient interview and hospital records. The PRECISE-DAPT score, presently not routinely used in local practice, was calculated to determine bleeding risk ($\geq$ 25 high, 18–24 moderate, $<$ 18 low). Low risk patients on oral anticoagulation and all moderate-high risk patients were discussed with cardiologists for antithrombotic therapy optimisation. Patients were followed up over a 1-year period post-PCI for mortality, bleeding and ischaemic cardiac outcomes (stent thrombosis, stable/unstable angina, myocardial infarction, coronary revascularisation). Descriptive statistics were performed ($p < 0.05$ statistically significant).
Main outcome measures: Bleeding risk, antithrombotic therapy optimisation, outcomes of long-term (12 months) versus short-term ($\leq$ 6 months) DAPT duration.
Results: The 137 patients recruited (82% male, mean age 66 years, 46% primary PCI) were scored as high (42%), moderate (26%) or low (32%) bleeding risk. From the 88 (64%) patients discussed with cardiologists, the score was considered in 37 of them, and short-term DAPT was prescribed. The remaining patients were prescribed long-term (66%) or short-term (7%) DAPT irrespective of score. During the 1-year period post-PCI, most patients (51.8%) experienced negative outcomes (DAPT long-term 32.1%, short-term 19.7%, $p = 0.329$): Ischaemic (33.6%; long-term 22.6%, short-term 11%, $p = 0.413$), minor bleeding presenting as melaena, haematuria or gingival bleeding (10.9%; long-term 3.6%, short-term 7.3%, $p = 0.013$) and mortality (7.3%; long-term 5.8%, short-term 1.5%, $p = 0.300$). The remaining patients (48.2%) did not experience negative outcomes (long-term 34.3%, short-term 13.9%, $p = 0.329$).
Conclusion: Pharmacist-led assessment of bleeding risk with the PRECISE-DAPT score supported cardiologists in the personalisation of antithrombotic therapy post-PCI. The majority of patients experienced negative outcomes in the 12 months after PCI. There was no difference in outcomes between long-term and short-term DAPT duration, except for minor bleeding.
Email address: francesca.wirth@um.edu.mt
Disclosure of Interest
None Declared.

OR01.3 Pilot-study: Concentration of direct oral anticoagulants in patients undergoing cardioversion

A. Gavrilova[1 2,*], J. Meisters[3], A. Ņikitina[1], G. Latkovskis[3 4], I. Urtāne[1]

[1]Riga Stradins University; [2]Riga Stradins University Red Cross Medical College; [3]Pauls Stradins Clinical University Hospital; [4]University of Latvia, Riga, Latvia

Background and Objective: Atrial fibrillation (AF) is the most common cardiac arrhythmia. Most patients with AF receive long-term oral anticoagulation to prevent embolic events. For patients undergoing electrical cardioversion, amiodarone as a pre-treatment is commonly administered to increase efficacy of the procedure. The risk of bleeding increases in patients with higher blood levels of direct oral anticoagulant (DOAC), and amiodarone may interfere with DOAC concentrations. The clinical practice still has uncertainty regarding monitoring DOACs in patients with safety issues. This pilot-study aimed to detect patients with higher-than-expected DOAC concentration levels in the blood.
Setting and Method: This cross-sectional study was conducted at Pauls Stradins Clinical University Hospital, Riga, Latvia, from August to December 2022. Irrespective of time since the intake of the drug one blood sample was taken at the hospital to determine DOAC concentration on the day of cardioversion. Functional anti-Xa assays for rivaroxaban and edoxaban (*Hyphen Biomed*) and anti-IIa assay for dabigatran (*Siemens Healthineers*) were used. Statistical Package for

the Social Sciences (*IBM SPSS Statistics 27.0*) was used for data analyses. For group comparison, Fisher's Exact Test was applied.
Main outcome measures: DOAC concentration level (ng/mL) in blood sample using chromogenic assays.
Results: A total of 38 patients receiving rivaroxaban (n = 19), dabigatran (n = 6) or edoxaban (n = 13) were involved. In this cohort, DOAC concentration level intervals in blood were 8–480 ng/mL for rivaroxaban, 24–237 ng/mL for dabigatran and 9–481 ng/mL for edoxaban. Seventeen (rivaroxaban n = 10, dabigatran n = 2, and edoxaban n = 5) patients received amiodarone several days before and on the procedure day. Higher-than-expected DOAC concentrations were detected among 3 rivaroxaban and 7 edoxaban users with levels higher than 343 ng/mL and 245 ng/mL as defined in the literature (*Dunois C, 2021*), respectively. Higher-than-expected concentrations were observed among patients treated with amiodarone: 20% (n = 2/10) vs 11% (n = 1/9) for rivaroxaban (OR = 2.0, p = 1.000) and 100% (n = 5/5) vs 25% (n = 2/8) for edoxaban (OR = 15.0, p = 0.021).
Conclusion: In atrial fibrillation patients receiving amiodaron before scheduled electrical cardioversion, higher-than-expected concentrations of DOACs are commonly found. The interaction of amiodarone seems significant with edoxaban. Larger and more focused real-life studies are warranted to estimate the safe simultaneous use of DOACs with amiodaron and other common medicines in this patient population.
References: Dunois, Claire. 2021. "Laboratory Monitoring of Direct Oral Anticoagulants (DOACs)" *Biomedicines* 9, no. 5: 445. https://doi.org/10.3390/biomedicines9050445
Email address: Anna.Gavrilova@rsu.lv
Disclosure of Interest
None Declared.

OR02.1 Implementation of a clinical pharmacy consultation for oral anticancer drugs at the outpatient clinic of a tertiary care hospital

S. Wuyts[1 2,*], P.-J. Cortoos[1], M. Desmedt[1], S. Deuss[1], T. Leysen[1], S. Verheyen[1], C. Ligneel[1]

[1]Pharmacy Department, Universitair Ziekenhuis Brussel; [2]Research Group Clinical Pharmacology and Clinical Pharmacy, Vrije Universiteit Brussel, Brussels, Belgium

Background and Objective: Oral anticancer drugs (OACD) are expensive but also effective drugs prescribed to onco-/hematology patients. Because these drugs have also complex dosing regimens, various side effects and significant drug-drug interactions, clinical pharmacists can have a key role in patient education and follow-up to improve overall clinical outcomes, increase OACD cost-efficiency and avoid poor quality of life. In this study, we reviewed the activities of an outpatient clinical pharmacy consultation in a tertiary care hospital in terms of patient and drug type.
Design: In the Universitair Ziekenhuis Brussel, a 721-bed academic hospital in Belgium, a pharmacy dispensary was installed at the outpatient clinic for onco-/hematology patients in July 2020. During a 2.5-year period (up to December 2022), clinical pharmacists were responsible for dispensing OACD and educating patients on their newly prescribed therapy, focusing on medication reconciliation and review of OACD appropriateness (dosage, usage and interactions). Patient and therapy characteristics data were collected at each consultation. Both median and interquartile range (IQR), frequencies and percentages were calculated as appropriate.
Results: A total of 386 patients (61%) received pharmacist-guided education at OACD first delivery (median age = 65 years, IQR 19; 52% male), of which 34 conversations were for a next-line treatment (9%). On average, 0.6 first deliveries were performed by the pharmacist each day (median of 14 per month). There was a light increase in number of patient visits with pharmacist guidance over the years (2020: median = 13 per month, IQR 11; 2022: median = 15 per month, IQR 6). Patients with an oncological history were seen more often than hematological patients (n = 316, 82%), with urological (21%), skin (20%), breast (20%) and digestive (19%) cancers being most present. Hematological disease (n = 70) involved multiple myeloma (34%) or leukemia (34%). Targeted therapies were delivered most (41%), followed by classic chemotherapeutic drugs (26%) and anti-hormonal drugs (14%).
Conclusion: The pharmacist consultation at first delivery of an OACD is integrated as routine practice in the outpatient cancer clinic. However, areas for improvement e.g. bad news conversation and clinical impact assessment need to be further explored. As OACD management is very specific to the prescribed therapy, an expert look on the pharmaceutical aspects can help patients to attain the most successful therapy as possible.
Email address: stephanie.wuyts@uzbrussel.be
Disclosure of Interest
None Declared.

OR02.3 Pharmacist-led prescription verification in Belgian hospitals: where do we stand?

A. De Keyser[1,*], A.-E. Petit[1], F. Destrée[1], F. Quinet[1], G. Noêl[2], O. Dalleur[1 3]

[1]Université Catholique de Louvain, Bruxelles; [2]Cliniques Saint-Pierre, Ottignies; [3]Cliniques Universitaires Saint-Luc, Bruxelles, Belgium

Background and Objective: Pharmacist-led prescription verification has proven to reduce medication errors in the hospital setting. Heterogeneous practices have however been reported. This work aimed to describe the implementation of pharmacist-led prescription verification activities across Belgian hospitals since Belgium has integrated prescription verification in its legislation in September 2020.
Setting and Method: Hospital pharmacists were invited to complete a web-based survey distributed nationwide through Belgian professional associations. The questionnaire included open-ended questions and multiple-choice questions. A single collective response was expected per hospital.
Main outcome measures: A total of 49 usable responses were collected. The response rate was 48% (49 out the 103 Belgian hospital). Most of participants worked in non-teaching (88%) and 200–800 beds hospitals (74%). Prescription verification systems were implemented in most hospitals at least two years ago for most part (90%, 44/49; 76%, 31/41). They were coupled with a clinical decision support system (CDSS) in some case (64%, 28/44). Most common CDSS alerts concerned drug interactions (52%, 23/44), exceeding of maximum doses (21%, 9/44), medication allergy history (16%, 7/44) and prescription duplicates (11%, 5/49). More than a third of pharmacies did not have access to medical files (35%, 16/44). Most pharmaceutical activities were exclusively performed in back office (33%, 15/45) with no decentralised pharmacist directly doing medication verification in care units.
Results: A total of 49 usable responses were collected. Most of participants worked in non-teaching (88%) and 200–800 beds hospitals (74%). Prescription verification systems were implemented in most hospitals at least two years ago for most part (90%, 44/49; 76%, 31/41). They were coupled with a clinical decision support system (CDSS) in some case (64%, 28/44). Most common CDSS alerts concerned drug interactions (52%, 23/44), exceeding of maximum doses (21%,9/44), medication allergy history (16%, 7/44) and prescription duplicates (11%, 5/49). More than a third of pharmacies did

not have access to medical files (35%,16/44). Most pharmaceutical activities were exclusively performed in back office (33%,15/45) with no decentralised pharmacist directly doing medication verification in care units.
Conclusion: This first of its kind survey gives us a baseline of prescription verification practices in Belgium. Majority of Belgian hospitals have developed prescription verification processes. These processes turn out to be heterogeneous across hospitals.
Email address: aude.dekeyser@saintluc.uclouvain.be
Disclosure of Interest
None Declared.

Posters

PP02 Evolocumab real-world data: five-year experience of an Italian hospital

N. Bellato[1,*], M. C. Campanardi[1], E. Calzavara[1], S. Nobili[1], G. De Vivo[1], M. Cambareri[1], C. Veneziano[1], F. Atzeni[1], M. Andena[1], E. Ciceri[1], P. Richelmi[1], S. Vimercati[1]

[1]ASST Fatebenefratelli-Sacco, Milan, Italy

Background and Objective: To date, 18 million of people die every year from cardiovascular diseases. LDL cholesterol (LDL-C) is a major modifiable risk factors in the development of cardiovascular disease and this is why many drug classes that lower blood concentration were developed: in particular, there is a new class of monoclonal antibodies that inhibit the Proprotein Convertase Subtilisin/Kexin type 9 (PCSK9). Evolocumab, a fully human monoclonal antibody that lowers and seems to maintain LDL-C by recommended levels, is a member of it.
The objective of this work is to evaluate the effectiveness of the monoclonal antibody evolocumab in the patients treated in our hospital and to collect prevalence data relating the main risk factors (sex, age, type of dyslipidemia).
Design: We conducted a retrospective observational study from 2017 to 2022, considering all patients who received therapy with evolocumab. Patients' cholesterol values were reviewed every six months: those with Reevaluation ≥ 1 were considered. Data relating the population treated with PCSK9 (age, sex, type of dyslipidemia, cholesterol levels, adverse reactions (ADRs)) were extracted from the AIFA (Italian Drug Agency) register and elaborated through pivot table.
Results: 76 patients were treated with evolocumab from 2017 to 2022: mean age was 64 ± 9 years (53% male; 14% smokers). The lipid parameters and the average percentage changes were evaluated both after 24 and 48 weeks of treatment: − 47% LDL-C after 24 weeks; − 58% after 48 weeks. The reduction in LDL-C was greater in males both after 24 weeks (− 54% males vs − 40% females) and 48 weeks (− 66% males vs − 50% females). Patients older than 70 years had a partial reduction in LDL-C compared those in the age group 60–70 (− 27% vs − 52%). Patients with mixed dysplidemia (PD) showed higher LDL-C reduction than those with non-familial hypercholesterolemia (FNH) (PD − 56%; FNH − 46%). No serious and unknown ADRs occurred.
Conclusion: This real-world data study confirms the effectiveness and safety of this new cholesterol-lowering therapy that allows to optimally reduce circulating LDL-C, lowering the frequency of cardiovascular events and mortality. AIFA registers, strictly monitored by Hospital Pharmacists, play a fundamental role for monitoring prescription appropriateness and safety while ensuring therapeutic adherence.
Email address: nicolettabellato@gmail.com
Disclosure of Interest
None Declared.

PP05 Safety and efficacy of imidazoline receptor agonists—a network meta-analysis

A. Érszegi[1,*], M. A. Bahar[1], V. Réka[1], D. Csupor[1]

[1]University of Szeged Institute of Clinical Pharmacy, Szeged, Hungary

Background and Objective: Cardiovascular diseases are responsible for the majority of deaths worldwide. Heart, brain, kidney, and other organ diseases are all significantly more likely to develop in people with hypertension. Thiazide diuretics, angiotensin-II-receptor blockers, angiotensin-converting enzyme inhibitors and long-acting dihydropyridine calcium channel blockers are considered as first-line agents in the treatment of hypertension, whereas centrally acting antiadrenerg agents are not part of first-line therapy. [1] However, imidazoline receptor agonists (C02AC) are potent antihypertensive drugs in this group, have only minor side effects. Our objective was to conduct a network meta-analysis in which the efficacy and safety of imidazoline receptor agonists are compared to those of first-line therapy agents and placebo.
Design: The meta-analysis was performed following the PRISMA guidelines using the PICOS format, taking into account the CONSORT recommendations. According to the WHO's ATC system, imidazoline receptor agonists are clonidine, guanfacine, tolonidine, moxonidine, rilmenidine. Studies were collected from four databases (Pubmed, Cochrane Library, Web of Science, Embase). The search term was: „ ((clonidine OR guanfacine OR tolonidine OR moxonidine OR rilmenidine) AND (hypert* OR blood)) AND random*". A total 5724 articles were found. These articles were filtered in the Zotero reference manager software. After duplicate removal, title and abstract and full text selection, 34 studies remained eligible for the meta-analysis. Only studies that compared imidazoline receptor agonists to placebo or another active ingredient from first-line therapy (such as hydrochlorothiazide) and included adult hypertensive participants were considered in the analysis.
Results: In comparison with placebo, the largest reduction in standing SBP/DBP was produced by guanfacine (MD*: − 23.60/− 14.30), followed by HCT (MD: − 8.32/− 7.62), clonidine (MD: − 8.11/− 10.61) and then rilmenidine (MD: − 6.52/− 7.32), after 4 weeks. A comparable trend was also found in the supine position, in which after 4 weeks, guanfacine seemed to be the most potent antihypertensive agent (MD: − 26.70/− 12.50), followed by HCT (MD: − 9.89/− 4.01), clonidine (MD: − 8.60/− 6.95) and then rilmenidine (MD: − 8.26/− 5.47), compared to placebo. In the sitting position, after 8 weeks, moxonidine resulted in the largest reduction of SBP/DBP (MD: − 23.80/− 10.90), followed by enalapril (MD: − 20.70/− 9.60), clonidine (MD: − 13.00/− 7.00), and then HCT (MD: − 11.00/− 5.00), compared to placebo.
Dry mouth was experienced in case of all imidazoline-receptor agonists compared to placebo, after 8 weeks of treatment, occurence of dry mouth was highest if clonidine was used (OR: 9.27) and the lowest if rilmenidine was used (OR: 6,46). The risk was the lowest in case of enalapril (OR: 0.42).
Conclusion: Although imidazoline receptor agonists are not considered as first line antihypertensive drugs, these compounds might be almost as effective as the first line agents examined in the studies meta-analuzed by us (enalapril, HCT). These pharmacons can be tolerated well; however, clonidine users reported the most dry mouth symptoms, while rilmenidine users reported the least in between the imidazoline receptor agonists.
Our study has some limitations too. Every measurement has identical active substances, so stances can not always be compared. (e.g.: efficacy of rilmenidine was measured in standing and supine position,

but not in sitting after 8 weeks of therapy). The studies are relatively old with some methodolical weaknesses. However, the results of our meta-analysis clearly indicates, that further studies are needed in this topic.

[1] Guideline for the pharmacological treatment of hypertension in adults. Geneva: World Health Organization; 2021. Licence: CC BY-NC-SA 3.0 IGO.

Email address: erszegi10@hotmail.com

Disclosure of Interest

None Declared.

PP06 Bleeding risk and gaps in the evidence: the story of a diabetic patient undergoing cardiac surgery after myocardial infarction

A. Feka[1,*], M. Verdugo-Marchese[2], Z. Gunga[2], M. Kirsch[2], N. Perrottet[1], F. Sadeghipour[1 3 4]

[1]Departement of Pharmacy; [2]Departement of Cardiac Surgery, Lausanne University Hospital, Lausanne; [3]Center for Research and Innovation in Clinical Pharmaceutical Sciences, Lausanne University, Geneva University; [4]Institute of Pharmaceutical Sciences of Western Switzerland, School of Pharmaceutical Sciences, Lausanne University, Geneva University, Lausanne, Geneva, Switzerland

Background and Objective: In patients with cardiovascular heart disease, coronary artery bypass grafts (CABGs) is the preferred revascularization strategy in patients with diabetes, heart failure with reduced ejection fraction (HFrEF) and multivessel coronary artery disease compared to percutaneous coronary intervention (PCI) [1]. European guidelines recommend the prescription of a double anti-platelet therapy (DAPT) after myocardial infarction without persistent ST-segment elevation (NSTEMI), regardless of the revascularization method [2]. However, in case of PCI aspirin should be replaced by oral anticoagulation when the patient present atrial fibrillation (AF) [3]. Little is known about the best postoperative antithrombotic therapy in patients undergoing CABGs and presenting AF.

Design: A 59-year-old male patient, known for diabetes, HFrEF and hypertension was admitted to our hospital for NSTEMI. The coronary angiography showed multivessel coronary artery disease and magnetic resonance imaging confirmed myocardial viability in all segments. These elements led the Heart team to choose CABGs over PCI.

According to the European guidelines, our patient was candidate for a DAPT after surgery [2]. However, at postoperative day 2 and day 3, he presented two episodes of AF, leading to the prescription of apixaban 5 mg bid for stroke prevention. As mentioned in the NSTEMI guidelines, triple antithrombotic therapy after CABGs should be avoided [3]. Therefore, by extrapolation of the European guidelines for PCI, a P2Y12 receptor inhibitor was preferred over aspirin [3].

Results: Our patient was discharged at postoperative day 12 for cardiac rehabilitation with a prescription of clopidogrel 75 mg qd for 12 months after surgery and apixaban 5 mg bid for at least three months. In absence of recurrence of postoperative AF at 3 months, apixaban would have been stopped and replaced by lifelong aspirin [2].

At postoperative day 19, he developed progressive dyspnea and was transferred to the emergency department of our hospital. A transthoracic echocardiography showed pericardial effusion and a partial collapse of the right atrium and right ventricle, leading to an urgent pericardial drainage. Despite the risk of stroke and a CHA_2DS_2-VASc score of 3, apixaban was stopped because of the major bleeding event. In order to further decrease the bleeding risk, clopidogrel was replaced by lifelong aspirin.

Conclusion: This case highlight the gaps in the evidence about the antithrombotic therapy in patients presenting AF and undergoing CABGs after NSTEMI. Moreover, the management of antithrombotic therapy *after* a serious bleeding event is not addressed in the European guidelines, urging cardiac surgeons to take decisions on a case-by-case basis.

Further studies and guidelines are needed to fill these gaps, especially for diabetic patients, who are more likely to benefit from CABGs than from PCI after myocardial infarction.

[1] F. Neumann et al., European Heart Journal (2019) 40, 87–165.

[2] M. Valgimigli et al., European Heart Journal (2018) 39, 213–254.

[3] J. Collet et al., European Heart Journal (2020) 00, 1–79.

Disclosure of Interest

None Declared.

PP08 Development of preliminary guidelines to improve pharmaceutical care for cancer patients with type 2 diabetes mellitus ongoing anticancer treatment in one oncology day-hospital

C. Gossery[1 2,*], L. Kanagaratnam[3], S. Barraud[4], J. Clarenne[1], M. Brugel[5], M. Boulin[6], C. Carlier[2], M. Perrier[5], D. Botsen[5], D. Hettler[1], C. Mongaret[1], O. Bouché[2], F. Slimano[1 2]

[1]Pharmacy department; [2]Oncology Day-Hospital; [3]Methodological Support Unit; [4]Endocrinology—Diabetes—Nutrition Department; [5]Gastroenterology and Digestive Oncology Department, CHU Reims, Reims; [6]Pharmacy department, CHU Dijon, Dijon, France.

Background and Objective: The prevalence of type 2 diabetes mellitus (T2DM) in cancer patients ongoing anticancer treatment is about 20%. The optimal management of this population is complex. The objective was to propose preliminary guidelines for the management of these specific patients.

Design: The methodology used was adapted from the Delphi method. First, a workgroup was constituted and proposed 5 items. An online questionnaire (Google Forms®) was then created for the assessment of the 5 items. The Form has been sent to a panel of 12 experts each was required to indicate the level of agreement rated from 1 (not at all in agreement) to 10 (perfectly in agreement) and adding comments. The workgroup planned to discuss and revise proposed items according to expert assessment in order to reach final agreement.

Results: Ten of the experts contacted participated in the review of the proposed preliminary guidelines. After a first round, all the levels of agreement and commentaries have been discussed in the workgroup and a new proposal has been made to experts for final agreement. The overall level of agreement for the 5 proposals was $84 \pm 20\%$ [30–100%]. The item 2 had the highest level of agreement with a level of $90 \pm 15\%$ [60–100%]. Item 3 was the only one that got less than 80% of agreement ($79 \pm 24\%$ [30–100%]). Expert reviews let to the improvement of the 5 items and the addition of a sixth: 1/ The most recent glycosylated hemoglobin (HbA1c) value should be sought; 2/ To add the detection and management of glycemic disorders into the pharmaceutical consultation (PC); 3/ To add in the PC the importance of performing daily blood glucose tests at different times of the day; 4/ In case of weight loss $\geq 10\%$ from baseline patient weight, a medication review of antidiabetic should be integrated; 5/ Reduce to its minimum the corticosteroid burden; 6/ Included HbA1c targets into the personalized cancer care program.

Conclusion: The preliminary guidelines were created to improve and standardize pharmacist management for cancer patients with T2DM ongoing anticancer treatment. They have been implemented into daily practice and further studies should assessed them.

Email address: cgossery@chu-reims.fr

Disclosure of Interest
None Declared.

PP09 How to prevent medication errors with insulin: the example of a multidimensional training campaign

V. Hay[1,*], M. Egot[1], L. Painchart[1], A. Roger[1], M.-H. Tywoniuk[1]

[1]Service pharmacie, Centre hospitalier de Denain, Denain, France

Background and Objective: Our hospital is committed to a policy of good drug use, with the aim of reducing the risks associated with drug treatment to the patients. In this context, a list of high-alert medications, including insulin, has been established, based on the recommendations of the Institute of Safe Medication Practices. Insulin good use represent a multidimensional challenge: it needs the knowledge of the drugs, of the medical devices (MD) but it also implies several actors, from the caregivers to the patients. In 2021, we decided to start a prevention campaign targeting the insulin in order to propose adapted fun trainings or tools to each actor. After the inventory of the different actions we've been able to carry out so far, the objectives of this work are to assess their necessity, to explore their efficacy and to define the areas of adjustment.
Design: The actions carried out for each actor have been identified.
For caregivers (prescribers, nurses, pharmacists, pharmacy technicians):

- An escape game has been created in October 2021, to make them think about the proper use of the drug. A «before/after» type knowledge assessment and a satisfaction questionnaire have been implemented.
- Pharmacy agents were also trained in the proper use of MD through a card game, with the aim of in-turn training the nurses of the departments to which they are assigned.
- Index cards about drugs and MD have been made available in the Document Management of our hospital.

For patients: since April 2022, pharmaceutical consultations for diabetic patients have made it possible to assess their knowledge and review with them insulin usage through creation of a puzzle about the injection steps.

The activity reports have been analysed.
Results: During the escape game, 90 agents were trained (including 67 nurses, 3 doctors and 5 pharmacists). On average, agents obtained a score of 13.4/20 before the training and 17.4/20 after the training. With this training, 100% of agents reported being aware of the risk of error, having acquired knowledge and being satisfied with it.
Concerning the proper use of MD, 14 agents (pharmacy technicians, juniors, pharmacists) were trained in the use of insulin injection devices. They will train the nurses of their departments in their own way in the first half of 2023 (28 sessions planned).

Five index cards are now available as reference documents for all caregivers.

In the case of pharmaceutical consultations, 60 patients have been interviewed. Among them, 38 were on insulin. Following the questionnaire, the injection steps had to be reviewed for 27 patients, the injection sites for 26, the rotations for 27 and the notions of lipodystrophy for 34 of them. Twenty-one know the right time to inject. Only 19 patients preserve their insulin correctly.
Conclusion: Following the assessment of our trainings, and despite the daily use of insulin by caregivers and patients, we highlighted that several major notions were not known. This alerted us to the importance of such training campaign but also comforted us in its potential for improving patient care. Feedbacks are positive and encourage us to deploy them on other high-alert medications, keeping the concept of fun training as we did here through 3 different types of serious games. These actions will be repeated in the future to ensure the sustainability of knowledge acquisition.
Email address: pharmaciens@ch-denain.fr
Disclosure of Interest
None Declared.

PP10 Optimization of the (pharmacotherapeutic) treatment and care of the Type 2 diabetes patient in Belgium through medical-pharmaceutical concertation between general practitioners and community pharmacists.

N. Kizilmese[1,*], S. Rydant[1 2], G. Merckx[3]

[1]Royal Assocation of Pharmacists Antwerp (KAVA); [2]Departement Pharmaceutical Sciences, Universiteit Antwerpen; [3]Domus Medica, Antwerpen, Belgium

Background and Objective: Diabetes type 2 is a chronic condition and can lead to devastating micro-and/or macro-vascular complications in the long term when not treated properly. This causes increased morbidity and mortality and decreased health-related quality of life among patients. Further the additional cardiovascular risk (blood pressure, cholesterol, smoking) must also be limited as much as possible. All this makes the treatment of these patients a complex matter. It is clear that the care for these patients can no longer be treated monodisciplinary—and that it requires a level of care from the community pharmacists (CP) that goes beyond usual dispensing. The added value of a multidisciplinary collaboration between the CP and general practitioners (GP) lies in a combination of knowledge and competences and joint responsibility.
In 2018, the Royal Association of Pharmacists in Antwerpen (KAVA) and Domus Medica have developed a quality improving program (QIP) in the context of Medical-Pharmaceutical Concertation (MPC). MPC is an initiative from the NIDHI in Belgium to promote the rational prescribing and dispensing of medication and the safe use of medication in general and provides financial incentives to GP and CP to organize local MPC-projects, based on a QIP. A local MPC-project starts with a 'kick-off meeting', to make agreements of the rational use of medication. Most of the time, different cases are discussed in small interprofessional groups. After this meeting, the agreements are subsequently implemented into practice and can be evaluated with quality indicators.
Design: This specific QIP focusses on five modules:
The pathogenesis of different forms of diabetes, diagnosis, complications and non-pharmacological treatment, Guidelines / medication groups—Treatment of comorbidities and reimbursement criteria Case studies of different patient with heart failure, renal insufficiency, overweight Care pathways and adherence to therapy—Vaccinations, and The safe use of diabetes medication during the Ramadan for a specific population.

MPC targets the GP and CP with mutual diabetes type 2 patients.
Results: KAVA and Domus Medica strongly believe in this initiative. Currently 17 local MPC-projects have been organized in which 102 CP and 122 GP participated. The four most important topics of these MPC-projects are; Treatment & comorbidities: lifestyle intervention, pharmacotherapy.
Overview and objective of care pathways and organizing good use medication (GGG) interview by CP and feedback to GP Adherence Vaccination.
Conclusion: A MPC is a promising service to support evidence-based practice for optimizing treatment of diabetes patients through constructive collaboration between GP and CP. There was a particular need for good information about the treatment options for diabetes, comorbidities and lifestyle. A second point of attention was the care pathways, which are clearly insufficiently known, let alone implemented. There is certainly a strong will in the local MFO projects to

work on compliance, as evidenced by the many indicators around the 'GGG'. Unfortunately, we have no insight into whether these have been effectively worked out in practice. Further research is necessary to analyze the impact of the MPC-project.
Email address: nilgun.kizilmese@meduplace.be
Disclosure of Interest
None Declared.

PP12 Physician's adherence to prescribing guidelines for anti-diabetic agents is independently associated with better HbA1c control

N. Nguyen-Hoang[1 2,*], N. T. N. Mai[2]

[1]Epidemiology, University Medical Center Groningen, Groningen, Netherlands; [2]Pharmacy, HUTECH University, Ho Chi Minh City, Viet Nam

Background and Objective: Despite its great importance in enhancing quality of patient care and improving health outcomes, data on drug utilization among those who received treatment for diabetes has been scarce in Vietnam. We aimed to assess the pattern of prescriptions and physician's adherence to clinical practice guidelines for antihyperglycemic agents and examine factors related to better diabetes control in patients with type 2 diabetes (T2DM) in the country.
Setting and Method: Cross-sectional study; 400 randomly selected adult outpatients with T2DM in 2020 at Thu-Duc Regional General Hospital, Ho Chi Minh City. Physicians' adherence to prescribing guidelines was considered if the antihyperglycemic agents were aligned with the 2017 Vietnam national guidelines regarding (contra)indications, therapy adjustments, and dosage. Multivariable logistic regression was applied to investigate independent factors related to patients' HbA1c target achievement.
Main outcome measures: Pattern of anti-hyperglycemic agents; the proportion of physicians' adherence to prescribing guidelines; patient's achievement of individualized HbA1c targets.
Results: The average age of the study sample was 59.4 years (standard deviation 11.8 years). Females accounted for 56% of included patients. Metformin, sulfonylureas, and insulin represented the most commonly prescribed antidiabetic agents, which were ordered in 95%, 61%, and 19% of included patients, respectively. Statin, ACEIs/ARBs, and beta-blockers were the most common concomitant medications among those patients (84%, 52%, and 52%, respectively). Half of all patients achieved their individual HbA1c goal of treatment (51%, n = 202). The overall rate of physicians' adherence to prescribing guidelines for antihyperglycemic agents was 77%. The multivariable analyses revealed that physicians' adherence to clinical practice guidelines was independently related to the achievement of HbA1c control (OR = 3.25, 95% confidence interval 1.66–6.39, $p = 0.001$).
Conclusion: Over three-quarters of antihyperglycemic prescriptions in outpatients with T2DM adhered to clinical practice guidelines, representing an independent factor associated with HbA1c target achievement. The study findings suggest the need for measures to enhance physicians' adherence to prescribing guidelines (e.g. pharmacist-led intervention) to optimize patients' diabetes control.
Email address: h.n.nguyen@umcg.nl
Disclosure of Interest
None Declared.

PP16 Analysis of the use of antidiabetic drugs in patients with Type 2 diabetes mellitus and cardiovascular comorbidities in a social-health center

F. Ruiz-Molina[1,*], T. Rico-Gutiérrez[1], M. Moreno-García[1], E. Sánchez-Sánchez[1], C. Tolosa-Martínez[1], S. Sanz-Rodríguez[1], M. Vidal-Iglesias[1], Y. Pérez-Robres[1], A. Hernández-López[1], M. T. Criado-Illana[1], R. Coloma-Peral[1]

[1]Segovia General Hospital, Segovia, Spain

Background and Objective: 1/To analyze the use of antidiabetic drugs in patients in a social-health center diagnosed with type 2 diabetes mellitus (DM2) with cardiovascular comorbidities (CVC). 2/To detect potentially inappropriate prescriptions (PIP) in these patients.
Design: Descriptive observational study conducted in 300 residents of a social-health center. Residents with a diagnosis of DM2 and CVC were selected, their clinical history (manual and electronic) and medical prescription in the Farmatools® program were reviewed. The following variables were collected: age, sex, CVC, glycosylated hemoglobin (HbA1c) and antidiabetic treatment. The CVC considered were: arterial hypertension (HTN), heart failure (HF), ischemic heart disease, stroke, cardiac arrhythmias and venous thromboembolism. The last HbA1c value available during the previous year is recorded. The pharmacotherapeutic bulletin INFAC: "Update of pharmacological treatment of hyperglycemia in type 2 diabetes (2021)", whose target HbA1c is 7–8.5%, is used to establish the HbA1c objectives and the detection of PIP.
Results: 21/300 residents (7 men and 14 women) have a diagnosis of DM2 with CVC, with a median age of 87 years. The most frequent CVC are HTN (71.4%), HF (23.9%) and cardiac arrhythmia (23.9%). 66.7% of patients have HbA1c $< 7\%$, 19% HbA1c between 7–8.5% and 14.3% HbA1c $\geq 8.5\%$. Of the patients, 52.4% had one drug prescribed for diabetic control, 33.4% had two drugs and 14.2% had three. At least one PIP was detected in 61.9% of patients, with a total of 18 PIPs. The most frequent are: adequacy of antidiabetic treatment to CVC (50%), deprescription of antidiabetic drugs (42.1%) and others (7.9%).
Conclusion: A high percentage of patients present HbA1c $< 7\%$, leading to an increased risk of morbi-mortality in elderly patients. A lack of treatment optimization has been detected, being necessary the integration of the pharmacist in the multidisciplinary team for the review and deprescription of drugs that are not necessary and to achieve a better control of DM2 and its consequences.
Email address: fruizmo@saludcastillayleon.es
Disclosure of Interest
None Declared.

PP17 Assessment of medication adherence, knowledge and quality of life in patients with type 2 diabetes mellitus

S. L. Soylemez[1,*], A. Dayan[2], R. Demirtunc[3], M. Sancar[4]

[1]Clinical Pharmacy, Marmara University Faculty of Pharmacy; [2]Family Medicine; [3]Internal Medicine, Haydarpasa Numune Training and Research Hospital; [4]Clinical Pharmacy, Marmara University Faculty of Pharmacy, Istanbul, Türkiye

Background and Objective: This descriptive prospective study aims to evaluate medication adherence, knowledge, and quality of life of patients who have type 2 diabetes mellitus.

Setting and Method: The study included 114 patients with a history of at least six months of type 2 diabetes mellitus, using at least one antidiabetic drug, and having an HbA1c level higher than 7%, who were admitted to a training and research hospital in Istanbul between 8 September 2021 and 2 September 2022. Their medication adherence was measured using the Morisky–Green–Levine scale. Disease knowledge level was evaluated by 18 items self-structured questionnaire, and the patients' quality of life was measured by using Whoqol-bref which is currently scored in four domains and has no total score. Each domain has a score of a maximum of 20 points. Higher scores indicate better quality of life.
Main outcome measures: Medication adherence, quality of life and diabetes knowledge.
Results: The mean age of the patients participating in the study was 60.10 ± 9.89 years and 50% were female. Their mean diabetes age was 14.6 ± 7.35 years. Of them, 65.8% were low-educated patients. Mean HbA1c levels of patients 9.21 ± 0.16. Smoking history was 23.7% while alcohol consumption history was 7.9%. It was determined that 48.3% of the patients were non-adherent to their medication regimens. It was seen that the HbA1c value of non-adherent patients was higher than adherent patients (9.7% vs 8.1%, $p = 0.018$). Also, a weak correlation was found between medication adherence and the HbA1c value (r = ,298 $p < 0.01$). Median score of patients' knowledge level was 9.00 over 18 items. The quality of life of the patients was slightly above the average (physical health was 14.72, psychological was 15.22, social relations was 13.88, and the environment was 15.21). Although quality of life of the patients subdomain scores were slightly higher in adherent patients than in non-adherent patients, statistical significance was only seen in physical health ($p = 0.010$). It was seen that 38.8% of the patients did not come to their routine controls for their diabetes on time. Patients aged 65 and over were more adherent to their medications ($p = 0.018$).
Conclusion: It was concluded that the adherence and knowledge levels of type 2 diabetes patients were not very high, and their quality of life was slightly above average. We believe that clinical pharmacy services will contribute positively to the medication adherence, knowledge, and quality of life of type 2 diabetic patients.
Email address: slubeyne@gmail.com
Disclosure of Interest
None Declared.

PP20 Experience with statin therapy in patients undergoing cardiac procedures

J. C. Calleja[1], F. Wirth[1,*], R. G. Xuereb[2], L. M. Azzopardi[1]

[1]Department of Pharmacy, Faculty of Medicine and Surgery, University of Malta; [2]Department of Cardiology, Mater Dei Hospital, Msida, Malta

Background and Objective: Statin associated muscle symptoms (SAMS) may lead to therapy non-adherence and discontinuation. The aim was to assess experience with statin therapy in patients undergoing cardiac procedures.
Setting and Method: The study was undertaken at the Cardiac Catheterisation Suite of an acute general hospital. A data collection sheet and questionnaire were developed and validated. Following ethics approval, patients who underwent coronary angiography (n = 125) or percutaneous coronary intervention (PCI) (n = 125) at time of recruitment and were on statin therapy were prospectively recruited by convenience sampling (July 2021-September 2022). The data collection sheet and questionnaire were completed using hospital records and patient interview respectively. Descriptive statistics were performed.
Main outcome measures: Statin therapy adherence; SAMS incidence, clinical presentation and impact.
Results: From the 250 patients (75% male, 39% between 65 and 74 years, 40% primary education level, 71% obese), 65% were prescribed atorvastatin, 18% simvastatin, 17% rosuvastatin. There was no significant difference in patient responses between coronary angiography and PCI ($p > 0.05$). Forty-one percent of patients 'sometimes' or 'frequently' skip a dose, mostly attributed to forgetfulness (47%). Sixteen percent of patients considered stopping treatment without consulting a healthcare professional, and 46% never visit a physician for medication review. Twenty-eight percent (n = 70) of patients self-reported SAMS. Patients reported a mean perceived pain score of 6 out of 10 (range 1–10). The most common symptom was myalgia (n = 54), and 29 of these patients were taking atorvastatin. Other symptoms were muscle weakness (n = 7), cramps (n = 6) and stiffness (n = 3). Patients stated that SAMS made them feel tired requiring rest (n = 61), reduced their ability to be active (n = 42) and disturbed their sleep (n = 42). From the 70 patients experiencing SAMS, 56 informed a physician and the statin was changed in 20 patients.
Conclusion: Adherence to statin therapy in the patient cohort studied is not optimal and patients reported SAMS which impacted their quality of life. Data indicating how long patients had been prescribed statin therapy was not available, and may have inference on adherence and side-effects reporting. Regular medication review of patients on statins by pharmacists in collaboration with physicians may improve patient experience and therapy adherence.
Email address: francesca.wirth@um.edu.mt
Disclosure of Interest
None Declared.

PP23 Prescribing appropriateness and cost-analysis of mifepristone: an Italian women's hospital experience

M. C. Campanardi[1,*], N. Bellato[1], M. Cambareri[1], S. Nobili[1], C. Veneziano[1], F. Azteni[1], M. L. Andena[1], E. Ciceri[1], P. Richelmi[1], G. De Vivo[1], S. Vimercati[1]

[1]ASST Fatebenefratelli-Sacco, MILANO, Italy

Background and Objective: In recent years, the birth control has become an important social theme connected to the personal freedom of women. According to Italian law, the main therapeutic indication of Mifepristone (MIF) is ongoing medical interruption of intrauterine pregnancy (IIP) in combination with prostaglandin analogues. To obtain access to MIF, the MD needs to fill-out a special drug request-form containing two sections: anamnestic patient's data and therapeutic indication.
Thus, Hospital Pharmacists on one hand evaluate prescription appropriateness, and on the other one they collect data to monitor patients receiving MIF. The aim of this work is to assess the MIF's prescribing trend of an Italian Women's Hospital and to perform a cost-analysis.
Design: It was conducted a retrospective observational study from January 2021 to December 2022, by considering all patients who received MIF therapy. For each patient, therapeutic indications and treatment costs were collected in an Excel datasheet thanks to the Pharmacy management software and then they were analyzed.
Results: The nominal drug request-form was introduced at the beginning of 2021. Throughout 2021, 128 MIF tablets have been prescribed: only 16 prescriptions (equal to 12.5%) were appropriate for IIP(6.25% of therapeutic abortion 6.25% of voluntary interruption of pregnancy (VIP)). Inappropriateness was of 87.5%. Throughout 2022, the total number of MIF prescriptions decreased to 115 (− 5.37%) with an increase in prescription appropriateness of 11.4%: 27 prescriptions (equal to 23.47%) were appropriate for IIP (9.80% for therapeutic abortion as fetal chromosomal abnormality, 13.72% for VIP). Inappropriateness was of 76.53%.Regarding the MIF costs,

while in 2021 €6,987.52 were charged to the Department of Pathology of Pregnancy in 2022 the total cost was €6,987.52.
Conclusion: Even if patients number decreased by 5.37% between 2021 and 2022 together with the costs, over the next few years MIF presumed maximum needs are expected to rise. Clinical Pharmacists will play a fundamental role in the costs reduction by monitoring the MIF appropriateness of prescribing and evaluating the MIF patient's eligibility through a computerized dispensing system. Finally, since the prescription appropriateness observed was about 18%, the present analysis is an alarm bell to improve the clinical appropriateness of MIF according to abortion care guideline and to Italian law.
Email address: mc.campanardi@gmail.com
Disclosure of Interest
None Declared.

PP24 Medical abortion: a practical quick reference algorithm to support the gynecologists

M. C. Campanardi[1,*], N. Bellato[1], M. Cambareri[1], S. Nobili[1], C. Veneziano[1], F. Azteni[1], M. L. Andena[1], E. Ciceri[1], P. Richelmi[1], G. De Vivo[1], S. Vimercati[1]

[1]ASST FBF-SACCO, Milan, Italy

Background and Objective: Medical abortion (MA) is a procedure that takes place over several days and uses medicine to end a pregnancy. Moreover, MA is of a great interest since it requires multidisciplinary expertise to inform the patient, to evaluate the eligibility, to administrate abortion drugs and to manage the side effects. The World Health Organization (WHO) Abortion Care Guidelines recommends, to induce abortion, at gestational ages < 12 weeks Mifepristone (MIF) + Misoprostol (MIS), MIF alone or Letrozole (LET) + MIS; at gestational ages ≥ 12, in cases of missed abortion (< 14 weeks) and intrauterine fetal demise ($\geq$ 14–28 weeks), WHO recommends MIF + MIS or MIF alone. The WHO guidelines for incomplete abortion suggest the MIS-only regimen.
In view of the complexity of the MA guidelines, the aim of this work is to develop a quick reference-tool that can support gynecologists in their choice of treatment, evaluating differences between treatments and patient need.
Design: The MA therapeutic scheme was obtained by consulting the WHO Abortion Care Guidelines. The drugs data were extrapolated from the Summaries of Product Characteristics (SmPC) and from research papers (PubMed).
Results: Medical management of MA at gestational ages < 12 weeks or in case of missed abortion (< 14 weeks) requires: 200 mg MIF per os (PO), followed 1–2 day by 800 μg MIS vaginally (PV), sublingually (SL) or buccally (B); if used alone, MIS 800 μg PV, SL or B; the combination regimen of LET (10 mg PO) + MIS 800 μg SL (4^{th}day) is suggested only in case of induced abortion (< 12 weeks). Medical management of induced abortion at gestational ages ≥ 12 weeks suggests: 200 mg MIF PO, followed 1–2 day by repeat doses of 400 μg MIS (every 3 h) or 400 μg MIS (every 3 h). For intrauterine fetal demise ($\geq$ 14–28 weeks) 200 mg MIF PO + 400 μg MIS PV or SL every 4–6 h is recommended, while for incomplete abortion 600 μg PO or 400 μg SL (< 14 weeks uterine size) and 400 μg SL, PV, or B every 3 h (≥ 14 weeks uterine size) are recommended.
Evidence from clinical studies demonstrates that MIF + MIS is more effective than MIS alone. The use of LET + MIS showed higher success rates of abortion and fewer side-effects; most of all, in comparison to MIF, in some parts of the world LET is affordable to all due to the low cost.
Conclusion: Although mainly the same molecules are used for different indications, the dosages, timing, and routes of administration are different and could make a difference in the selection of the best therapeutic scheme according to the patient need. Since this algorithm is a useful tool for this purpose, we will present the results in clinical practice.
Email address: mc.campanardi@gmail.com
Disclosure of Interest
None Declared.

PP28 The perspectives of pharmacogenetic testing implementation in patients with suspected primary pulmonary hypertension

N. Hromníková[1,*], E. Babiak[1], L. B. Pivackova[1], J. Klimas[1], P. Krenek[1], E. Goncalvesova[2], M. Luknar[2], G. Doka[1]

[1]Department of Pharmacology and Toxicology, Faculty of Pharmacy, Comenius University, Bratislava; [2]Department of Cardiology, National Institute for Cardiovascular Diseases, Bratislava, Slovakia

Background and Objective: Patients with suspected or already diagnosed primary pulmonary hypertension (PH) often take numerous medications, most of them extensively metabolised by highly polymorphic CYP450 enzymes. Frequently, it can lead to inter-individual variability in treatment, resulting in adverse or even toxic drug reactions and/or therapeutic failure.
Setting and Method: 69 patients underwent right heart catheterisation at the National Institute for Cardiovascular Diseases, Bratislava, as part of the diagnostic procedure for PH. DNA was extracted from blood samples, and single nucleotide polymorphisms of selected, clinically actionable variants CYP2D6*4, CYP2D6*41, CYP2C9*2, CYP2C19*2, and CYP2C19*17 were detected by qPCR. Clinical data were obtained from the patient's health records. Statistical analysis included a t-test, (N-1) chi-squared test, Z-test, and Hardy–Weinberg equilibrium.
Main outcome measures: Median of prescribed drugs, percentage of drugs metabolised by CYP450, comparison of sample allelic frequency with overall European population, overall percentage of carriers of polymorfic variants of CYP450.
Results: Pharmacogenetic testing was performed on 43 men and 26 women with a median age of 54 years (range 21–80). PH was diagnosed in 16 patients, and 53 suffered from other cardiovascular diagnoses, mainly left ventricular failure (n = 46; 86.8%). The median number of prescribed drugs was 9 (range 0–14), of which 61% were CYP450 substrates (40% CYP3A4; 13% CYP2C9; 12% CYP2D6; and 10% CYP2C19). The CYP2C19 gene polymorphisms were more prevalent in our cohort than expected in the European population (36% vs. 23%, $p = 0{,}01$ for CYP2C19*17 and 21,7% vs. 14%, $p = 0{,}02$ for CYP2C19*2). In total, 81% of the patients were carriers of at least one variant allele with altered enzyme function. The results of pharmacogenetic testing were in accordance with Hardy–Weinberg equilibrium ($p > 0.05$). One of the most common drugs prescribed to our patients (approx. 25%) were warfarin and pantoprazole, for which dosage adjustment is recommended in certain types of metabolizers by pharmacogenetic databases.
Conclusion: The gene polymorphism of CYP450 enzymes is highly prevalent in patients with suspected PH, who are generally treated with substrates of those enzymes. Thus, personalization of treatment with respect to a patient's genotype has the potential to significantly improve therapeutic outcomes.
Email address: hromnikova7@uniba.sk
Disclosure of Interest
None Declared.

PP31 Influences on reporting adverse drug reactions by patients and the public: a systematic review using the Theoretical Domains Framework

E. Maklad[1,*], L. Shafei[1], L. Mekki[1], R. Ghanem[1], T. Alhathal[1], R. Almalouf[1], Z. Nazar[1 2], D. Stewart[1]

[1]QU health, College of Pharmacy, Qatar University, [2]Drug information center, hamad medical corporation, Doha, Qatar

Background and Objective: It is estimated that only 10% of all Adverse Drug Reaction (ADRs) experienced by patients are reported. Opportunities for patients to directly report their ADRs through reporting systems offers the healthcare system significant advantages. Under-pinning investigations with behavioral theories, such as the Theoretical Domains Framework (TDF), promotes greater understanding of the important influencers that determine whether patients report their ADRs.
Synthesizing the TDF, this study aims to classify, summarize and synthesize the reported behavioral determinants that influence patient ADR reporting.
Setting and Method: In October 2021, five electronic databases were systematically searched. Studies reporting on the influencers of public or patients reporting of ADRs were eligible for inclusion. Full-text screening, data extraction and quality appraisal were performed independently by two authors. Extracted influencers were mapped to the TDF. Risk of bias was assessed using the JBI and MMAT tools for qualitative and mixed methods studies respectively.
Main outcome measures: The most significant domains of the theoritical domains framework (TDF) that influence patient and public behavoirs regarding direct ADR reporting.
Results: A total of 26 studies conducted in 14 countries across five continents were included. The most significant TDF behavioral influencers of patient ADR reporting were knowledge; social/professional role and identity; beliefs about consequences, in addition to environmental context and resources. Overall, the majority of included studies appeared to have low risk of bias.
Conclusion: The key behavioral determinants of ADR reporting may be further mapped to relevant, evidence-based behavioral change strategies; thus, facilitating the development and optimization of interventions to support patient ADR reporting. Such relevant strategies include emphasis on public education and training; and further involvement from regulatory bodies to establish mechanisms, which facilitate feedback and follow-ups on submitted reports.
References
1. Inácio P, Cavaco A, Airaksinen M. The value of patient reporting to the pharmacovigilance system: a systematic review. Br J Clin Pharmacol. 2017;83:227–46.

2. Cane J, O'Connor D, Michie S. Validation of the theoretical domains framework for use in behaviour change and implementation research. Implement Sci IS. 2012;7:37.
Email address: znazar@qu.edu.qa
Disclosure of Interest
None Declared.

PP32 Behavioral influences on reporting adverse drug reactions by Hamad Medical Corporation patients in Qatar: a qualitative study using the Theoretical domains Framework

L. Shafei[1,*], E. Maklad[1], L. Mekki[1], R. Ghanem[1], T. Alhathal[1], R. Almalouf[1], Z. Nazar[12], D. Stewart[1]

[1]QU health, College of Pharmacy, Qatar University; [2]Drug information center, hamad medical corporation, Doha, Qatar

Background and Objective: Patient reporting of adverse drug reactions (ADRs) offers numerous advantages to health care systems, namely promotion of patient rights, earlier detection of important ADRs, and benefits to healthcare organizations from patient involvement. The World Health Organization advocates for the establishment of mechanisms to allow for patients and the public to report their ADRs directly through accessible reporting systems. In Qatar, despite advancements in pharmacovigilance and medication safety, a direct patient/public reporting systems is yet to be developed. Synthesizing the Theoretical Domains Framework (TDF), the aim of this study is to identify the behavioural influencers of local patient towards direct reporting of ADR.
Setting and Method: A purposeful sampling technique was adopted to recruit in-patients receiving care at Hamad Medical Corporation Heart hospital in November 2021. Semi-structured interviews were conducted using an interview guide developed using the Theoretical Domains Framework (TDF). Interviews conducted in either Arabic or English, lasting 15–30 min were audio-recorded and transcribed verbatim. Data were analyzed using thematic analysis and behavioural influencers were mapped to the TDF.
Main outcome measures: The most significant domains of the theoritical domains framework (TDF) that influence local patients' behavoiurs regarding direct ADR reporting.
Results: 6 patient interviews were conducted. The prominent TDF behavioral domains that influence direct reporting of ADRs were knowledge; beliefs about capabilities and social/professional role and Identity. Although patients expressed an interest to use an ADR reporting system and a sense of responsibility to contribute to medication safety, they lacked understanding of what compromises an ADR and had doubts in their ability to accurately report their ADR.
Conclusion: The key behavioral determinants identified in this study which influence patient ADR reporting can be mapped to evidence-based behavioral change strategies to facilitate intervention development and optimization to enhance rates of ADR reporting. Aligning strategies should focus on patient and public awareness, education, and training regarding ADRs and ADR reporting.
References:
1. Inácio P, Cavaco A, Airaksinen M. The value of patient reporting to the pharmacovigilance system: a systematic review. Br J Clin Pharmacol. 2017;83:227–46.

2. Cane J, O'Connor D, Michie S. Validation of the theoretical domains framework for use in behaviour change and implementation research. Implement Sci IS. 2012;7:37.
Email address: znazar@qu.edu.qa
Disclosure of Interest
None Declared.

PP33 Investigating if the Profund Index is a good prognostic method for palliative patients and reviewing the applicability of the STOPP-FRAIL criteria in these patients.

M. Reyes Malia[1,*], E. Contreras Macias[1], A. Ganfornina Andrades[1]

[1]Pharmacy, Hospital Infanta Elena, Huelva, Spain

Background and Objective: Patients with multiple pathologies (PPP) are characterised by having two or more chronic diseases, with exacerbations and interrelated pathologies that lead to clinical fragility, and most of them are polymedicated, which can aggravate their pathologies, suffer new secundary effects and new interactions can appear. These patients can benefit from tools to determine their prognosis, such as the PROFUND index, and to deprescribe medication, such as the STOPP-Pal criteria. Our aim is to conduct a systematic review of one of the methods designed to assess the prognosis of life expectancy of PPPs, the PROFUND Index (PI), and to look for evidence of STOPPPal deprescribing criteria that could be applied to patients with a PI $\geq$ 11 with a life expectancy of less than 12 months.

Design: In accordance with the PRISMA Statement (Preferred Reporting Items for Systematic Reviews and Meta-Analyses Statement) we conducted a systematic review of articles describing PI as a prognostic index. We performed a systematic review of articles describing PI as a prognostic index and a search for evidence of the different sections of the STOPP-Pal criteria as a method of deprescribing.
Results: The initial search identified 30 articles, of which 14 met the inclusion and exclusion criteria. In addition, 1 obtained through references was added. The systematic review yielded concordant results justifying the use of the PROFUND Index in PPP patients. In the second part of the study, a search was made of the different sections of the STOPP-Pal criterion, from highest to lowest level of evidence, of the 27 indicators of the criterion, a search was made of 24, as 3 of them depend on the treatment. The results were: 24 reviews, of which 9 were systematic reviews and 2 Cochrane reviews, 2 meta-analyses, 4 guidelines, 2 trials and 2 prospective observational studies.
Conclusion: The evidence found in the systematic review justifies the application of the PROFUND Index in PPP patients and its relevance in clinical practice, identifying those with life expectancy of less than 12 months and on the other hand we have verified that the STOPP-Pal deprescription criteria for patients with a prognosis of less than 12 months, are evidence-based.
Email address: miguelmalia@hotmail.com
Disclosure of Interest
None Declared.

PP34 A systematic review of tools to assess disaster preparedness and readiness among healthcare professionals

B. A. Mukhalalati[1,*], S. ElShami[1], O. Yakhti[1], M. Izham[1], A. Awaisu[1], M. Sherbash[2]

[1]College of Pharmacy, Clinical Pharmacy and Practice Department; [2]College of Health Sciences, QU Health Qatar University, Doha, Qatar

Background and Objective: Background: COVID-19 pandemic has demonstrated that healthcare professionals (HCPs), including pharmacists, have important roles and responsibilities in supporting their society in times of emergencies, and in ensuring the maintenance of seamless healthcare services provision. Nevertheless, the pandemic has compelled all HCPs across the world to reconsider what preparedness for disasters entails.
This systematic review aims to identify tools used to assess the preparedness and readiness to practice among HCPs during disaster and emergency situations, to summarize their psychometric properties, and to identify the most validated, reliable, and comprehensive tool for assessing preparedness and readiness to practice during disaster and emergency situations that could be used among all HCPs.
Setting and Method: A systematic review search strategy was designed to identify the relevant original research articles using five concepts: disasters, health personnel, preparedness, management, and questionnaire. Three databases (PubMed, ProQuest Public Health, and CINAHL) were searched for research studies published in English. The identified tools were summarized according to their measurement scope/context, healthcare discipline, psychometric properties, and strengths and limitations.
Main outcome measures: Preparedness and readiness of healthcare providers.
Results: Some of the most commonly used tools are the Disaster Preparedness Evaluation Tool (DPET), the Provider Response to Emergency Pandemic (PREP) tool, and the Emergency Preparedness Information Questionnaire (EPIQ). A quite large proportion of the retrieved tools were developed primarily to assess educational interventions related to developing HCPs' knowledge and skills related to disaster management. Moreover, most of the retrieved tools have undergone minor psychometric evaluations (i.e., content validity and internal consistency reliability).
Conclusion: The findings of this review highlighted the sacristy of adequately developed and tested assessment tools that can be employed to examine disaster preparedness amongst HCPs from different healthcare disciplines and in different disaster situations, which calls for future collaborative research initiatives to ensure evaluating and consequently improving HCPs preparedness for disasters.
Keywords: disaster, healthcare personnel, preparedness, readiness, questionnaires Acknowledgment: Qatar National Research Fund (QNRF), Early Career Researcher Award (ECRA): ECRA03-001-3-001
Disclosure of Interest
None Declared.

PP36 Potentially inappropriate medications in hospitalised elderly patients assessed by using different tools—a monocentre retrospective analysis.

S. Prášilová[1], A. Oleárová[2,*], O. Stašová[3], M. Kalina[3], J. Klimas[1]

[1]Comenius University Bratislava; [2]University Hospital Bratislava - Hospital Ruzinov; [3]Slovak University of Technology, Bratislava, Slovakia

Background and Objective: The elderly population is increasing globally. Due to age-related physiological changes that affect the pharmacokinetics and pharmacodynamics of drugs, the elderly are predisposed to drug-related problems. Using of potentially inappropriate medications (PIMs) is associated with adverse drug reactions, increased healthcare costs, health services utilization and hospital admissions.
The aim of the study was to determine the using of PIMs in elderly patients during hospitalisation.
Setting and Method: A monocentre retrospective analysis was conducted involving clinical data from 120 patients aged 65 years and above on medication treatment during hospitalisation at the chronic care department in University Hospital Bratislava during 2018 and 2019. Medications to be avoided, to be used with caution were assessed as PIMs individually to the health condition of patients by using 3 different tools: the Beers´ criteria 2019 Update, the FORTA, and the 2012 Czech expert consensus for potentially inappropriate medication use in old age. To compare outcomes, the Chi-square test was used. Variables considered for calculation were gender, number of chronic conditions, number of drugs used during hospital stay.
Main outcome measures: Number and structure of PIMs used during hospital stay in involved cohort of elderly patients by using three different tools in relation to health condition and other used medication.
Results: The study included 120 patients (68.3% females) of average age 79.9 (range 66–99). Average number of chronic diseases was 9.9 per patient (range 3–18), and average number of drugs was 10.5 per patient (range 5–33).
Combination of three tools of PIMs criteria led to identify 102 patients (85%) as receiving PIMs (overall PIMs number n = 121; 1.19 PIMs per patients). The prevalence of PIMs based on Beers´ criteria only was 55, based on FORTA only was 105 and based on Czech expert consensus only was 86. The common PIMs were proton pump inhibitors (n = 38), vasodilators and nootropics (n = 24), non-benzodiazepine hypnotics (n = 12), benzodiazepines (n = 9) and centrally acting antihypertensive (n = 9). There was found no significant associations between PIMs and gender, number of drugs used, number of chronic conditions respectively, but significant association between the presence of cardiovascular disease and use of PIMs.

Conclusion: A high prevalence of using of PIMs was observed among patients of study cohort. It is important to optimise the medication treatment in elderly to facilitate improved health outcomes, mainly by improving the interprofessional cooperation in health care.

References:

1. By the 2019 American Geriatrics Society Beers Criteria® Update Expert Panel. American Geriatrics Society 2019 Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults. J Am Geriatr Soc. 2019;67(4):674-694.

2. Kuhn-Thiel AM, Weiß C, Wehling M; FORTA authors/expert panel members. Consensus validation of the FORTA (Fit fOR The Aged) List: a clinical tool for increasing the appropriateness of pharmacotherapy in the elderly. Drugs Aging. 2014;31(2):131-40.

3. Fialová D, Topinková E, Ballóková A, Matějovská-Kubešová H; expert panel members. 2012 CZ expert consensus for potentially inappropriate medication use in old age: Appropriate choice of drugs and drug dosing in geriatric patients (Section I.), drug-disease interactions in the old age (Section II.). Klin Farmakol a Farm. 2013;27(1):18-28.

Disclosure of Interest

None Declared.

PP37 Aged patients hospitalized for COVID-19: how are their comorbidities different from those of aged patients hospitalized outside the epidemic period?

P. Hindlet[1 2], J. Leblanc[3], H. Vallet[4], C. Ratsimbazafy[5], C. Fernandez[1 2], C. Schwab[1 2,*]

[1]Sorbonne Université, INSERM, Institut Pierre Louis d'Epidémiologie et de Santé Publique, IPLESP, AP-HP, Hôpital Saint-Antoine, Service Pharmacie, F75012, Paris; [2]Département de Pharmacie Clinique, Université Paris Saclay, Faculté de Pharmacie, Orsay; [3]Sorbonne Université, INSERM, Institut Pierre Louis d'Epidémiologie et de Santé Publique, IPLESP, AP-HP, Hôpital Saint-Antoine, Unité de recherche clinique, F75012; [4]Service Gériatrie; [5]Service Pharmacie, Assistance Publique-Hôpitaux de Paris, Paris, France

Background and Objective: Comorbidities of COVID-19 aged patients have been poorly described. The main objective of this study was to describe the comorbidities of patients, aged 75 and older, hospitalized for Sars-Cov-2 infection (EC19P). Secondary objective was to compare these profiles with those of old patients hospitalized outside the pandemic period.

Setting and Method: We conducted a retrospective multicenter cohort study of EC19P with historical controls (HC) using the clinical data warehouse of fifteen hospitals in the Paris area. Included patients were all EC19P hospitalized in a medicine ward of the fifteen selected hospitals, between March the 1st and April the 30th of 2020. The HC were patients, aged 75 and older, hospitalized, in a medicine ward of the fifteen selected hospitals, between March the 1st and June the 30th of 2019. Bivariate analysis were conducted.

Main outcome measures: Demographical data and diagnoses of the Information Systems Medicalization Program, using the ICD-10 classification were retrieved in order to calculate the Charlson Index and to evaluate the health conditions associated with the geriatric syndrome.

Results: We included 7.762 EC19P (mean age = 84.7 years, 53.3% of female). For 51.9% of these patients, the Charlson index was > 3. 19.580 HC were considered. They were slightly younger than the EC19P (mean age = 84.4 years, $p < 0.05$), with less women (40.8%, $p < 0.001$) and less comorbidities (49.8% with a Charlson index > 3, $p < 0.05$).

Compared to the HC, EC19P had more chronic pulmonary diseases (10.5% vs 8.1%, $p < 0.001$) and more diabetes without complication (15.3% vs 11.5%). On the contrary, they had less myocardial infarction (2.4% vs 3.4%, $p < 0.001$), less congestive heart failure (19.0% vs 21.1%, $p < 0.001$), less diabetes with complication (6.9% vs 7.7%, $p = 0.029$) and less renal disease (14.9% vs 16.0%, $p = 0.032$).

Regarding the geriatric syndrome, the EC19P had less history of falls (21.4% vs 23.6%, $p < 0.001$), were less dependent (7.2% vs 9.5%, $p < 0.001$) and less painful (6.2% vs 8.0%, $p < 0.001$).

Conclusion: ECP19 were slightly older and with more comorbidities but seems less frail than the HC. The combined effect of overcrowding in healthcare services, their restructuring to accommodate COVID-19 patients, but also the fear of some patients to seek healthcare could explain the modifications in the patient's characteristics.

Email address: camille.schwab@aphp.fr

Disclosure of Interest

None Declared.