2018 | 1

BJHP

BELGIAN JOURNAL OF HOSPITAL PHARMACY

BJHP is the official scientific journal of the Flemish Association of Hospital Pharmacists

Vlaamse Vereniging van Ziekenhuisapothekers

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Vlaamse Vereniging van Ziekenhuisapothekers

Hospital Pharmacists' Day 2018
February 6, 2018
San Marco Village, Schelle, Belgium

This publication contains the abstracts of oral and poster presentations in the field of hospital pharmacy presented at the 'Hospital Pharmacists' Day' held by the Flemish Association of Hospital Pharmacists in Schelle (Belgium) on 6th February 2018.

For this event, twenty-seven abstracts were submitted. Six abstracts were accepted for both oral and poster presentation. Twenty-one abstracts were accepted for poster presentation. This publication contains nineteen abstracts for which the BJHP received approval for publication in the BJHP by the submitting author.

The best two posters presentations will be awarded the 'Amgen Scientific Award for Hospital Pharmacists'.

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ORAL AND POSTER PRESENTATIONS

OP 1 | Dosing renally cleared drugs in critically ill children: mind the trap of glomerular hyperfiltration!

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INTRODUCTION

Glomerular hyperfiltration (GHF), defined as an elevated glomerular filtration rate (GFR), induces the enhanced elimination of circulating solute by the kidneys. Recently, this phenomenon has received increasing attention in critically ill adults. The incidence in this setting is high, varying between 28-65%. In case of treatment with renally eliminated drugs, GHF suggests that these patients may be at risk for subtherapeutic drug concentrations when using standard dosage schedules. To date, data on the incidence of GHF in critically ill children are scarce.

AIM

The primary objective of this study was to investigate the incidence of GHF in critically ill children. Secondly, risk factors for the development of GHF were identified.

METHODS

This study was a single center, prospective, observational study, conducted at the Ghent University Hospital, Belgium, enrolling patients between 1 month and 15 years of age. GFR was measured by means of a calculated 24 hours creatinine clearance (24h ClCr). Creatinine in serum and urine were determined using Jaffe's reaction. GHF was defined as a GFR exceeding normal values for age plus two standard deviations. Logistic regression analysis was used to identify covariates for GHF.

RESULTS

Data were collected from 65 patients (median age 1.7 years, IQR 3.0). Overall, 84.6% of patients expressed GHF. The incidence slowly decreased during consecutive days after admission to the ICU. GHF patients had a median ClCr of 181.8 ml/min/1.73m² (IQR 78.9). Younger age and the absence of vasopressor support were found as independently associated factors with the development of hyperfiltration.

CONCLUSIONS

The incidence of GHF in critically ill children seems even higher compared to adults, using an age dependent definition. As GHF may lead to subtherapeutic treatment of renally eliminated drugs, early detection of patients at risk should be of main importance.

OP 2 | Implementation of the first Medicines Information Service in Belgium: a pilot study.

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BACKGROUND AND AIM

Medication errors are a threat to patient safety and often caused by insufficient knowledge among healthcare professionals. Given limited clinical pharmacists' presence on Belgian hospital wards, a pharmacy-led Medicines Information Service (MIS) can efficiently provide fast, accurate and objective medication-related information. In this study, we implemented a MIS in a major tertiary care Belgian hospital.

METHODS

Best practices were researched through literature and site visit in Charing Cross Hospital (London, UK). Secondly, hospital personnel was surveyed on medicines information needs. Our MIS was set up to centrally (single dedicated pharmacist, phone number and e-mail) receive medication-related questions with the option for additional clinical-pharmaceutical interventions. Implementation was accompanied by hospital-wide promotion. All enquiries were registered in the M*i*Databank®. After 4 months, the MIS was evaluated by analysing enquiries and user satisfaction.

RESULTS

221 respondents to our survey found 'drug administration/dosing' (79.7%), interactions (69.6%) and 'tablet crushing' (49.7%) the major problematic topics. Physicians favoured drug review, patient education/counselling and interaction information while nursing preferred support on drug administration and tablet crushing.

Between 09/01 and 09/05/2017, our MIS received 247 enquiries. Drug administration/dose-related questions (43.3%) were most prevalent, followed by drug choice/indication (10.5%), interactions (9.7%), IV-compatibility (8.5%) and tablet crushing (7.7%). 80.2% of enquiries were answered within 1 hour (median: 11min.). 81% of users mentioned improved knowledge by contacting the MIS, with 59%, respectively 56% reporting positive patient outcomes and time savings. Our MIS scored high on accessibility, timeliness, comprehensiveness and quality. Regarding workload, current MIS activity corresponds to 0.4FTE pharmacist with mean overall cost calculated at €15.4/enquiry.

DISCUSSION & CONCLUSION

There is still a great need for fast and reliable medication-related information. We succeeded to set up a well-running MIS with high user satisfaction and positive impact on knowledge, time consumption and patient outcome. Future plans are to extend and standardize our MIS activities.

OP 3 | Oral anticancer drugs: to crush or not to crush

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BACKGROUND

Healthcare professionals, involved in the daily care of cancer patients, are faced with the growing issue using oral anticancer drugs in patients experiencing swallowing difficulties.

The lack of commercially available oral liquid dosing forms might compromise initiating or prolonging necessary therapies in this patient population. Pharmacists are often challenged to provide liquid alternatives for oral drugs that have solely been made commercially as a solid formulation; therefore it is common practice to crush tablets or to prepare oral liquids from solid forms.

When preparing liquids ex tempore, a number of requirements need to be fulfilled. In addition to chemical, physical and microbiological stability of the active ingredients, therapeutic and toxicological aspects should be the subject of review.

OBJECTIVE

The goal was to develop a guide for healthcare providers in order to assist them in providing scientific and up-to-date information for patients who are in need of special dosing forms.

METHOD

A literature search in PubMed/Medline was conducted. Also, the registration documents and relevant phase I and II data from the pharmaceutical industry, U.S. Food and Drug Administration and European Medicines Agency were used as a source of information.

RESULTS

An overview for healthcare providers was drafted. Seventy oral anticancer drugs that were available on the Belgian market at the moment of the development were included.

Conclusion

The development of a pocket guideline has increased the awareness and will be added to the standard of care as to improve safe medication use in patients with swallowing difficulties.

OP 4 | The role of the front-office clinical pharmacist according to physicians and nurses: results of a structured questionnaire

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BACKGROUND & AIM

The front-office clinical pharmacist can fulfill different tasks on the wards.

To cover the greatest drug-related needs and risks in our hospital with our future projects, the perception of physicians and nurses regarding these topics was obtained.

METHODS

We conducted an electronically available structured questionnaire consisting of five questions among physicians (practicing physicians, residents and medical students) and head nurses.

Statements regarding the possible tasks of the clinical pharmacist – as described by the government -on admission, during hospital stay and at discharge, concerning provision of drug information and means of communication, were scored as "added value/priority", "useful/no priority" or "no need for". Drug classes and patient groups, on which the clinical pharmacist should focus, were indicated.

RESULTS

The overall response rate was 37,5% (93/248). Physicians and head nurses answered alike on the different statements.

62% of respondents assign evaluation of the drug history on admission - rather than the conduct itself - to the clinical pharmacist. During hospital stay, advising on drug therapy involving high-risk drugs and patient groups, should occur according to 82% of respondents. At discharge an active intervention is less priority. The clinical pharmacist should definitely be involved in drug protocols and education.

Availability by phone and e-mail to answer questions from the ward team, is valued more than joining daily ward rounds.

Our focus should be on anticoagulants, antimicrobial drugs, polymedicated and geriatric patients.

DISCUSSION & CONCLUSION

Physicians and nurses of our hospital acknowledge the added value of a clinical pharmacist in patient care. Advising on drug therapy of polymedicated patients involving anticoagulant or antimicrobial therapy, should be core business of the front-office clinical pharmacist. An advisory function is more needed than systematically performing tasks on the ward. However by doing so, a pro-active role as a multidisciplinary team member, whom is also visible for the patients, will not be fully addressed.

POSTER PRESENTATIONS

PP 1 | Subtherapeutic voriconazole serum concentration: consult of a clinical pharmacist

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BACKGROUND

An 64-old immunocompromised patient developed an *Aspergillus spp*. infection (September 2017). The therapy of choice is voriconazole.(1)

Therapeutic drug monitoring is routinely performed at the Ghent University Hospital, a therapeutic range of 2-5,5 mg/L is targeted. Despite multiple dose adjustments, serum concentrations were persistently subtherapeutic (< 2mg/L). Therefore, the clinical pharmacist was consulted.

AIM

To optimize the dosage and intake of voriconazole to achieve serum concentrations within the therapeutic range.

Method: A thorough literature review was conducted on the variable pharmacokinetics of voriconazole and possible serum concentration augmentation due to a drug-drug interaction by omeprazole.

RESULTS

Voriconazole exhibits intra- and interpatient variable non-linear pharmacokinetics and is extensively metabolized by CYP2C19 predominantly. Due to genetic polymorphism, ultra-rapid metabolizers (URM) are not able to achieve therapeutic serum concentrations. Also, drug-drug interactions can influence the serum concentration of voriconazole.(2) The administration of a CYP2C19-inhibitor, like proton pump inhibitors, can increase the serum concentration. The association with omeprazole can induce an increase of 39%.(3)

The possibility of this patient being an URM is small, respected the previously therapeutic serum concentrations (2,0 mg/L-October). Compliance to therapy was checked, as well the dose regimen (4 mg/kg BID). Subsequently, dosage was increased (+70%) up to 600 mg twice daily (6,8 mg/kg). Therefore, the pharmacist recommended to associate omeprazole 40 mg once daily.(4) Four days after the association, the serum concentration was 2,9 mg/L. Later on, the serum concentration was closely monitored due to the unpredictable effect of this association.

DISCUSSION & CONCLUSION

The association of omeprazole led to lasting therapeutic serum concentration. Clearly, inducing this interaction is not the standard recommendation since the risk of toxic concentrations due to the non-linear pharmacokinetics. Other factors, such as compliance, drug-drug and drug-food interactions should be explored. Therefore, the patient was counseled at discharge by a clinical pharmacist.

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PP 2 |'Beestjes' in de HLAF-kast? Het uitvoeren van een microbiologische omgevingsmonitoring bij de productie van steriele geneesmiddelen in de HLAF-kast

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ACHTERGROND & DOELSTELLING

De GZA ziekenhuisapotheek beschikt niet over een cleanroom voor de productie van steriele geneesmiddelen. Een aseptische werkwijze wordt gehanteerd in de HLAF-kast type A in een niet-geclassificeerde achtergrondruimte. Met het oog op de PIC/S wetgeving werd een microbiologische omgevingsmonitoring uitgevoerd in de HLAF-kast om na te gaan in hoeverre de huidige productiesetting tegemoet komt aan de PIC/S aanbevelingen.

METHODEN

De huidige reinigings- en desinfectiemethode met niet-steriele ontsmettingsalcohol 70° werd geëvalueerd door contactafdrukken te nemen van het werkoppervlak vlak voor en na de desinfectie bij bereidingssessies. De reinigings- en desinfectietechnieken werden visueel geobserveerd met een checklist. De microbiologische luchtkwaliteit werd onderzocht door blootstelling van sedimentatieplaten gedurende de bereidingssessies. Op het einde van de bereidingssessies werden handschoen vingertop afdrukken genomen om de kans op contactcontaminatie na te gaan. Alle voedingsbodems werden geïncubeerd bij de vereiste incubatietijd en -temperatuur. De CFU werden afgelezen en geïdentificeerd met de MALDI Biotyper. Een trendanalyse werd uitgevoerd.

RESULTATEN

Van de 124 contactafdrukken waren 2 positief (3 CFU) voor en 0 positief (0 CFU) na de desinfectie bij de bereidingssessies. De visuele inspectie van de huidige reinigings- en desinfectietechnieken toonde een niet-uniforme uitvoering aan. Op de sedimentatieplaten blootgesteld aan de lucht werden 0 CFU afgelezen. Op de handschoen vingertop afdrukken werden 0 CFU afgelezen. SOPs werden opgesteld voor een periodieke microbiologische omgevingsmonitoring in de toekomst.

DISCUSSIE & CONCLUSIE

Met de huidige reinigings- en desinfectiemethode wordt na de desinfectie voldaan aan de PIC/S aanbeveling, namelijk 0 CFU in een graad A omgeving. De niet-uniforme uitvoering beïnvloedt de effectiviteit niet. De blootstellingsduur van de sedimentatieplaten was te kort zodat moeilijk een besluit kon

worden gevormd over de microbiologische luchtkwaliteit. Bijkomend onderzoek met een volumetric air sampler is vereist. De kans op contactontaminatie van de bereidingen wordt laag ingeschat. Om echter uitsluitsel te geven over de steriliteit van het eindproduct zijn steriliteitstesten noodzakelijk.

PP 3 |Evaluation of recommendations provided by a multidisciplinary infectious diseases team as part of an antimicrobial stewardship program

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BACKGROUND & AIM

As part of an antimicrobial stewardship program a multidisciplinary infectious diseases team (MIT) was initiated in January 2011. The MIT consists of infectious diseases physicians, clinical microbiologists and clinical pharmacists. The objective of this study is to analyse the recommendations which have been provided by the MIT, the acceptance rate of the recommendations and to improve the performance of the MIT.

METHODS

A prospective, observational study was performed. Clinical pharmacists registered every recommendation during 58 non-consecutive days between March - July 2017. A standardised case record form was used. Recommendations were scored as accepted when the physician implemented the recommendation(s) within three days after the communication. Subsequently, recommendations concerning antimicrobial therapy were evaluated on the completeness of the written notes in the electronic patient file.

RESULTS

The MIT discussed 227 patients which led to 457 recommendations. Bone and prosthetic joint infections (18.5%), bloodstream infections (16.3%) and abdominal infections (13.8%) were most common. Seven types of recommendations could be distinguished: (1) continuation of current antimicrobial regimen [N=161 (35.2%)], (2) additional clinical investigations [N=100 (21.9%)], (3) dosing adjustments [N=24 (5.3%)], (4) discontinuation of antimicrobial therapy [N=31 (6.8%)], (5) switching from parenteral to oral formulations [N=15 (3.3%)] and (6) initiating [N=55 (12.0%)] or (7) changing [N=71 (15.5%)] the antimicrobial regimen with acceptance rates ranging between 74% and 100%. The written recommendations in the electronic patient file included posology, route of administration and duration of therapy in respectively 76.7%, 63.4% and 63.9%.

DISCUSSION & CONCLUSION

This study shows that the MIT generated a daily average of 7 recommendations with acceptance rates varying in function of the recommendation type. However, more efforts should be made to ensure a complete recommendation. Hence, a pre-designed text with specific sections will be developed to optimise and to standardise the notes in the electronic patient file.

PP 4 | Dubbele controle bij het toedienen van hoog-risico medicatie

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ACHTERGROND EN DOELSTELLING

Het AZ Jan Portaels ziekenhuis Vilvoorde heeft een ziekenhuisbreed beleid over hoog-risico medicatie (HRM). Het ziekenhuis beschouwt geconcentreerde elektrolytenoplossingen, sound- en lookalike geneesmiddelen, anticoagulantia, insulines, verdovende middelen en cytostatica, als HRM. Om de veiligheid te verhogen was een procedure nodig voor dubbele controle bij bereiden en/of toedienen. Een risico-analyse werd uitgevoerd voor alle HRM op de verschillende handelingen bij klaarmaken en toedienen, op beschikbaarheid van een antidotum, op eventuele monitoring na toedienen, etc. We concludeerden dat kans op schade bij de patiënt het grootst was na foutief bereiden en/of toedienen van geconcentreerde elektrolyten. Specifiek voor deze groep werd een procedure opgesteld, bestaande uit 3 processtappen: bereiding, controle van de bereiding door tweede persoon en controle voor toediening.

Uitbreiding van deze procedure naar alle HRM, is de volgende stap na toetsing en bijsturing van deze processtappen op de werkvloer.

METHODE

Enkele maanden na implementatie werd de uitvoering getoetst tijdens een onaangekondigde audit. Het beleid zal herwerkt worden indien nodig. Op de dag van de audit werden één of meerdere processtappen door 2 apothekers gecontroleerd bij patiënten behandeld met geconcentreerde elektrolyten . Op andere afdelingen werd de procedure bevraagd.

RESULTATEN

20% van de gecontroleerde toedieningen waren conform de procedure. Sommigen gaven aan dat dubbele controle in de praktijk wel gebeurt, maar dit konden de auditoren niet vaststellen. Op de meeste afdelingen gebeurde geen dubbel check. De verpleegkundigen gaven verschillende redenen: geen geroutineerde handeling, tijdsdruk en personeelstekort.

DISCUSSIE EN CONCLUSIE

Weinig bereidingen en/of toedieningen verlopen volgens de procedure. Daarom heeft de apotheker de procedure bijgestuurd. De standaardetiketten werden aangepast met plaats voor een dubbele paraaf. De apotheker kon niets wijzigen aan de tijdsdruk en het personeelskort. Een e-learning module wordt gecreëerd en posters worden verspreid zodat deze handeling routine wordt voor verpleging.

PP 5 | Evaluation of front and back office pharmaceutical interventions in a tertiary hospital: type, acceptance, clinical impact

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BACKGROUND

Pharmacist's recommendations are diverse and often complex.

Documentation of these recommendations is primordial to inform treating physicians. Since a few years pharmacist's back-office (BO) and front-office (FO) recommendations are well documented. Acceptation, clinical impact and type of interventions are only periodically evaluated.

AIM

Evaluation of back and front office pharmaceutical recommendations

METHODS

A monocentric, retrospective observational study was performed. Recommendations retrieved from the database (February-December 2016) were evaluated to determine the type, the underlying drug-related problem (DRP)[1] and acceptance rates. Clinical impact was evaluated through random selection of 58 cases and multidisciplinary evaluation by an expert-panel (two clinical pharmacists and two clinical pharmacologists) using a validated method[2].

RESULTS

During 11 months 2426 pharmaceutical recommendations were recorded for 1704 patients. Since a recommendation can be formulated for more than one DRP, therefore a total of 3175 separate recommendations were identified (BO: 62.5%). Fifty three recommendations were not clear for interpretation (1.7%) and acceptation rate could not be determined for 101 recommendations (3.2%) (e.g. early discharge). 1757 recommendations (58.4%) were accepted (BO: 57.3%; FO: 59.5%), 1264 recommendations (41.6%) were not accepted (BO: 42.7%; FO: 40.5%). The predominant DRPs were inadequate dosing (30.3%; acceptance rate: 57.0%) and drug-drug interactions (14.8%; acceptance rate: 54.5%). The most reported types of recommendation were change of dose and/or administration time (29.6%; acceptance rate: 53.4%) and therapeutic drug monitoring (17.5%; acceptance rate: 61.5%). Mean clinical impact was mostly assessed as significant (53.9%). Only the pharmacists rated 2 recommendations as extremely significant and 2 as harmful.

CONCLUSION

Most pharmaceutical recommendations were formulated back-office (62.5%). Overall, a good acceptance rate (58.4%) was established, similar to those mentioned in the literature[3-5]. FO recommendations were fewer, but show better acceptance rates. Clinical impact was assessed as significant by an expert-panel. Therefore, we can state that pharmaceutical recommendations are clinically relevant and well received by prescribers.

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PP 6 | Therapietrouw bij dialyse: resultaten na één maand

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ACHTERGROND & DOELSTELLING

25% tot 50% van de chronisch zieken zijn therapieontrouw[1]. Dialysepatiënten zijn een kwetsbare groep wat betreft therapietrouw.

Het doel van dit project is de therapietrouw te verbeteren via interventies door een ziekenhuisapotheker in opleiding (ZAIO) op maat van de patiënt.

METHODEN

40 chronische dialyse patiënten in drie ZNA sites, met een vaste huisapotheker, werden geïncludeerd. De ZAIO voerde interventies uit op maat van de patiënt, bepaald via ABQ (Adherence Barriers Questionnaire), op week 0-4-12-20. Elke patiënt kreeg zowel mondeling als schriftelijk educatie rond zijn medicatie. De schriftelijke educatie gebeurde via een zelf ontwikkelde medicatiebrochure in 'klare taal'. Bovendien werd er een medicatiereview en medicatiereconciliatie uitgevoerd. De therapietrouw werd gemeten via MMAS-8 (Morisky Medication Adherence Scales) en via de aankoopgegevens van de huisapotheek. De kennis van de medicatie werd bepaald door de patiënt zijn medicatieschema te laten aanvullen.

RESULTATEN

Via medicatiereconciliatie werden er gemiddeld 5.9 discrepanties bepaald.

Van de 40 patiënten hadden 17 patiënten een patiënt gerelateerde, opzettelijke én onbedoelde barrière voor therapietrouw. 16 patiënten ondervonden een medicatie gerelateerde barrière en 7 een gezondheid gerelateerde barrière.

Na vier weken was het aantal 'hoog' therapietrouwe patiënten, gemeten via MMAS-8, gestegen van 30 naar 38 (27% verbetering) ($p = 0.014$).

Er werd een verschil gemeten tussen de therapietrouw bepaald via zelfrapportering (MMAS-8) (75.0% hoog therapietrouw) en via de huisapotheek (16.7% 'hoog' therapietrouw).

De medicatiekennis van de patiënten was na vier weken gestegen van 51.1% naar 67.9% ($p<0.05$).

DISCUSSIE & CONCLUSIES

Uit deze tussentijdse meting blijkt de nood van goede transmurale zorg bij dialyse patiënten.

Na één maand van de studie bleek zowel de therapietrouw als de medicatiekennis gestegen te zijn. Hieruit kan besloten worden dat interventies en educatie op maat van de patiënt werken. Het effect van de interventies op langere termijn moet echter nog bepaald worden.

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PP 7 | Clinical Impact of unintended medication discrepancies for unplanned admissions

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BACKGROUND AND AIM

Transition between different healthcare settings is a risk factor for unintended medication discrepancies in the patient's medication list. Discrepancies have the potential to cause adverse drug events, therefore obtaining a complete medication list is very important when a patient is admitted to the hospital[1]. We aimed to evaluate the added value of a structured medication reconciliation at the Emergency Department by a pharmacy assistant.

METHODS

Pharmacy assistants performed a structured medication reconciliation for patients admitted to the Emergency Department. This medication list was compared with the list obtained by the physician to identify unintentional medication discrepancies. The clinical impact of the discrepancies was evaluated by a multidisciplinary team of 2 clinical pharmacists and 2 clinical pharmacologists.

RESULTS

During the study period (February – April 2016), a total of 279 (34.5%) unintentional medication discrepancies were identified for a total number of 808 drugs (113 patients). The most common type was omission of a drug (43,7%), followed by omission of frequency (17,2%) and omission of dose (14,7%). Drugs of the Alimentary tract and Metabolism, Cardiovascular system and Nervous System were associated with the highest discrepancy rate. There was a positive association between the number of discrepancies and the number of drugs per patient (p=0,002), information sources used (p=0,026) and the time needed to perform the reconciliation (p=0,001). A total of 6,5% discrepancies were evaluated as having potentially a very significant impact on patient's health, 30,6% as having the potential to cause moderate clinical impact and 62,9% as potentially having a minor or no impact on health outcomes (kappa = 0.193).

DISCUSSION AND CONCLUSION

This study provides evidence that structured medication reconciliation by means of a structured method is useful in order to obtain a complete medication history, to avoid medication related problems and to guarantee the patient's safety.

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PP 8 | Analyse van het gebruik van hypnosedativa in het Universitair ziekenhuis Gent

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ACHTERGROND EN DOELSTELLING

Benzodiazepines en aanverwante middelen worden vaak gebruikt voor de symptomatische behandeling van slapeloosheid en angststoornissen. Europa is sinds 2006 duidelijk de grootste gebruiker t.o.v. andere continenten[1]. Studies in België wijzen op een verontrustend hoog verbruik, dat nog zelfs blijkt toe te nemen, ondanks de vele sensibiliseringscampagnes[2,3].

In deze studie willen we het gebruik van HS analyseren zowel bij opname, tijdens hospitalisatie als ontslag. We wensen alsook na te gaan of er een verband is tussen bepaalde patiëntkarakteristieken en het HS gebruik.

METHODEN

Het HS gebruik werd geanalyseerd via een retrospectieve studie gedurende een periode van 5 maanden bij patiënten opgenomen op 2 interne en 2 chirurgische diensten. De data werden vergeleken met een gelijkaardige studie uitgevoerd in 2000 en 2010 op dezelfde afdelingen.

RESULTATEN

Gedurende de studieperiode waren 2372 patiënten gehospitaliseerd op één van de 4 diensten. In totaal namen 402 (16.9%) patiënten één of meerdere HS. Vóór opname namen 10.1% patiënten een HS als thuismedicatie; een HS werd opgestart bij 6.8% van de patiënten. Intermediair werkende HS werden het meest opgestart conform de richtlijnen binnen het UZ Gent. Bij 16.2% van de patiënten die een HS als thuismedicatie innamen, werd dit stopgezet bij ontslag. Indien een HS werd opgestart in het ziekenhuis, werd dit bij 22.4% van de patiënten verdergezet. Er was enkel een positieve correlatie tussen HS-gebruik en leeftijd, geslacht (meer vrouwen) en het aantal co-morbiditeiten. In vergelijking met 2000 en 2010, was er een daling van het HS gebruik in het ziekenhuis, alsook in het aantal nieuw opgestarte HS gebruikers[4,5].

DISCUSSIE EN CONCLUSIES

Het HS gebruik binnen het UZ Gent blijft nog steeds hoog. Dit blijkt uit drie metingen uitgevoerd in 2000, 2010 en 2017. Het opstarten van een beleid rond actieve afbouw van HS via een multidisciplinaire ondersteuning dringt zich op om het gebruik van HS te verminderen.

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PP 9 | Vancomycine tdm: it's (not) complicated

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ACHTERGROND EN DOELSTELLING

Overmatig en verkeerd gebruik van antimicrobiële middelen en het daaraan geassocieerde resistentieprobleem is een wereldwijde uitdaging. Optimalisatie van het gebruik van antimicrobiële middelen is noodzakelijk voor de beperking van resistentie, verbetering van klinische uitkomsten, beperking van toxiciteit en beheersing van kosten. Verschillende antimicrobial stewardship interventies kunnen daarvoor worden toegepast. Dosisoptimalisatie en TDM van vancomycine zijn interventies waarbij de ziekenhuisapotheker een centrale rol speelt. In dit onderzoek werd geëvalueerd of de optimalisatie van vancomycine dosering en TDM een positief effect had op de compliantie met de klinische richtlijn, TDM parameters en klinische uitkomsten.

METHODEN

Het onderzoek werd uitgevoerd in het UZ Antwerpen, een tertiair ziekenhuis met 573 bedden, met goedkeuring van het ethisch comité (B300201730826). Na het opstellen van een klinische richtlijn werden verschillende persuasieve interventies toegepast voor implementatie, namelijk verspreiding van de richtlijn via e-mail, educatieve sessies en directe feedback aan de behandelende arts. Deze feedback werd gegeven na dagelijks overleg tussen de apotheek en de afdeling klinische chemie via een gezamenlijke registratietool voor patiënten met vancomycine therapie.

Om de impact van de implementatiestrategie te bepalen werden patiënten van een pre-implementatie groep (16 januari 2016 - 16 april 2016) vergeleken met een post-implementatiegroep (16 januari 2017 - 16 april 2017). Patiënten jonger dan 18 jaar, patiënten op intensieve zorgen en dialyse patiënten werden geëxcludeerd.

Categorische variabelen werden in IBM® SPSS® Statistics versie 24 getest met de Chi-kwadraat test of Fisher's exact test. Continue variabelen werden getest met een onafhankelijke student T-test indien ze normaal verdeeld waren of met een Mann-Whitney U-test indien ze niet normaal verdeeld waren.

RESULTATEN

Er werden respectievelijk 72 en 68 patiënten geïncludeerd in de pre- en post-implementatiegroep. Het onderzoek toonde aan dat er een toename was van het aantal patiënten in de post-implementatiegroep wat betreft het toedienen van een ladingsdosis (56,9% vs. 92,6%; p=0,000), correcte berekening van een ladingsdosis (39,0% vs. 74,6%; p=0,000) en correcte berekening van een onderhoudsdosis (33,3% vs. 64,7%; p=0,000). Het aantal patiënten met een optimale dosering verbeterde bovendien ook na het invoeren van de klinische richtlijn (12,5% vs. 52,9%; p=0,000). In de post-implementatiegroep werden meer spiegels op een correct tijdstip bepaald (57,3% vs. 64,6%; p=0,044), waren meer spiegels therapeutisch (19,5% vs. 35,2%; p=0,000) en bereikten meer patiënten therapeutische spiegels (37,5% vs. 57,4%; p=0,019). In beide groepen werd geconstateerd dat niet-therapeutische spiegels vaak op een incorrect tijdstip werden bepaald (53,0% vs. 53,6%; p=0,903). De mediane tijdsduur met een therapeutische spiegel was hoger in de post-implementatiegroep (0,0%±23,3% vs. 14,6%±.44,7%; p=0,012).

DISCUSSIE EN CONCLUSIES

Na het implementeren van de klinische richtlijn werd vancomycine vaker correct gedoseerd en verbeterde de timing van de spiegelbepalingen. Er waren meer therapeutische spiegels en meer patiënten die therapeutische spiegels bereikten. Tenslotte nam de mediane tijdsduur met een therapeutische spiegel toe.

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PP 10 |Infusion reactions related to antithymocyte globulin administration: retrospective study in a pediatric Stem Cell Transplantation Unit

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BACKGROUND

Antithymocyte globulin (ATG), a polyclonal immunoglobulin directed against T-lymphocytes, is frequently used in conditioning regimens in addition to other prophylactic agents

for graft-versus-host-disease. Its use is complicated by infusion reactions (IR) and premedication is recommended. Close compliance with recommended infusion times may reduce the incidence and severity of IRs. The aim was to analyze the prevalence and severity of IRs by ATG in a pediatric Stem Cell Transplantation (SCT) population, to identify potential risk factors and to optimize our ATG administration protocol.

METHODOLOGY

A retrospective study of IRs during/after administration of ATG (Thymoglobuline®) (2.5 mg/kg/dose) in a pediatric SCT ward. All patients received paracetamol and methylprednisolone as premedication before each ATG administration. Specific recommendations with gradual increase of speed of ATG administration were compliant with the Summary of Product Characteristics and the hospital's guidelines. Severity of IRs was classified according to the Common Terminology Criteria for Adverse Events. Race, blood type, underlying pathology, reported allergies (drug/non-drug), previous IVIG reaction and asthma/bronchial hyperactivity were recorded.

RESULTS

A total of 16 patients (5 male, 31.3%) were included (age 0.5-13.2 years, median age 6.8 years). They represented 64 administrations. IRs were observed in 15 out of 16 (93.8%) patients, representing 23/64 (35.9%) administrations. Of these, 21/23 reactions (91.3%) were classified as grade 1-2 reactions while 2/23 (8.7%) as grade 4. Fifteen out of 23 reactions (65.2%) were observed during the first infusion, while 7/23 (30.4%) during the second administration. Both grade 4 reactions (100.0%) were observed during the first ATG infusion. No other potential risk factors could be identified.

CONCLUSION

A high number of IRs was observed, especially during the first ATG administration. Based on these data and conform literature data, our protocol for administration of ATG was adapted with standard inclusion of an antihistaminic in addition to paracetamol and corticosteroids, at least during the first ATG administration.

PP 11 | Infusion reactions to intravenous immunoglobulins in pediatric patients with secondary hypogammaglobulinemia

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BACKGROUND

Intravenous immunoglobulins (IVIGs) are frequently used to improve humoral immunity in patients with secondary hypogammaglobulinemia. Adverse events associated with their use are mostly mild and transient. The aim of this study was to determine the prevalence and degree of IVIG infusion reactions (IR) and to identify potential risk factors in a pediatric hemato-oncology and HSCT population.

METHODOLOGY

IVIGs (Multigam®) were administered at a standard dose of 400 mg/kg and with a gradual administration rate conform the hospital's protocol for IVIG administration. IRs were classified according to the Common Terminology Criteria for Adverse Events. Race, blood type, underlying pathology, reported allergies (drug/non-drug), previous IVIG reaction and asthma/bronchial hyperactivity were recorded. Collected data were coded and analyzed (SPSS® Statistics version 24, IBM, New York, USA) using contingency- and frequency tables.

RESULTS

A total of 64 patients (29 males, 35 females) were included (median age 6.9 year, range 0.6-16.2) representing 309 administrations. IRs were reported in 23/64 patients (35.9%), representing 27/309 (8.7%) of administrations. Most of the reactions were observed during the first administration (12/27; 44.5%), 4/27 (14.8%) during the second, 3/27 (11.1%) during the third and 8/27 (29.6%) during subsequent administrations. Of 27 reported reactions, 24/27 (88.9%) were categorized as grade 1-2 reactions, and 3/27 (11.1%) as grade 3. No grade 4 reactions were observed. Potential risk factors included immune-hematological malignancies (9 out of 35 administrations in this population; 25.7%), previous reported drug-related allergies (with more than 3 drugs) (4 out of 20 events; 20.0%), and previous reported IVIG hypersensitivity (4 out of 12 administrations; 33.3%).

CONCLUSION

The administration of IVIG's is considered to be well-tolerated with mostly grade 1-2 reactions. Further follow-up in larger population groups is necessary to confirm the observed potential risk factors.

PP 12 |Optimalisatie van het klinisch pad malnutritie

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Het is geen nieuw gegeven dat ondervoeding nefast is voor het algemene welzijn van de gehospitaliseerde patiënt. Prevalentiecijfers tonen aan dat malnutritie een reëel probleem is in de Belgische ziekenhuizen. De identificatie en behandeling van patiënten met ondervoeding is een essentieel onderdeel in het aanbieden van kwaliteitsvolle én kostenbesparende zorg.
In AZ Monica werden zowel de screening door de verpleegkundigen als het nutritioneel assessment door de diëtisten onvoldoende uitgevoerd. Bovendien werd de keuze van nutritionele interventie niet gestaafd door recente wetenschappelijke literatuur met als gevolg een hoog verbruik van TPN.
Er werd een centrale nutritieapotheker aangesteld voor de vorming van een ziekenhuisbreed klinisch pad malnutritie en, daaruit volgend, een optimaal voedingsbeleid in AZ Monica. Deze apotheker faciliteerde de multidisciplinaire communicatie tussen de directieleden, IT-team, verpleegkundigen, diëtisten, artsen en apothekers. Dit zorgde voor een verhoogde motivatie van alle betrokken disciplines. Zo ontstond er een nauwe samenwerking met de diëtisten dankzij de aanwezigheid van de nutritieapotheker op maandelijkse vergaderingen. Met een gegarandeerde opvolging van risicopatiënten door de diëtisten werd de screening op malnutritie door de verpleegkundigen ziekenhuisbreed geïntroduceerd. Op de dienst intensieve zorgen werd een optimaal voedingsbeleid opgestart door de nutritieapotheker in samenwerking met de diëtiste, verpleegkundigen en intensivisten. Ook op administratief vlak was de nutritieapotheker waardevol voor de betrokken partijen. Er werden protocollen omtrent voeding (en geneesmiddelen) opgesteld, gebaseerd op recente wetenschappelijke richtlijnen, ter ondersteuning van de diëtisten en collega-apothekers. Om de communicatie met het IT-team en de doorstroom van cijfergegevens te vergemakkelijken, werd een *key performance indicator* over malnutritiegegevens opgesteld.
Er is een duidelijke bewustwording ontstaan in verband met het belang van malnutritie in het ziekenhuis en een tendens van kiezen voor een correcte nutritionele interventie. De nutritieapotheker zal zich in de toekomst toespitsen op het blijvend motiveren van de verpleegkundigen tot ziekenhuisbrede screening en uitbreiding van het voedingsbeleid op intensieve zorgen.

PP 13 |Getting the most out of your medication distribution robot through continuous process improvements

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BACKGROUND & AIMS

Europe Hospitals is a general hospital with 720 beds on two sites. It was one of the first in Belgium (2012) to install a robot (Baxter Proud, one per site) to automate the medication distribution process. The objectives were twofold: lower risk of medication errors, and higher pharmacy productivity. In 2017 a continuous improvement program was started to bring the system to its next level of performance, covering also a third objective: greater assurance of medication efficacy.

METHODS

The weak spots related to medication errors were identified through a risk analysis of the robotized distribution process. The sources of time wastage were analyzed. 3-year consumption volumes and volatility of all tablets and capsules in the hospital formulary were analyzed. Drugs sensitive to humidity were identified.

RESULTS

Interventions were made in four areas: the selection of drugs to be distributed through the robot; modifications to the hospital formulary and electronic prescription system; the reconditioning of drugs handled by the robot; and equipment setup and maintenance. The specific interventions were very diverse. One example relates to look- and sound-alike drugs: these are preferably distributed to the robot in order to reduce the risk of mistakes. Another example is the reduction of the expiry period of reconditioned drugs from 1 year to 6 months in order to compensate for faster degradation. The third example is the use of multiple pictures of the same drug by the image recognition apparatus in order to have fewer false rejected bags.

DISCUSSION & CONCLUSION

Getting the most out of your medication robot requires continuous adaptations and improvements in drug selection and reconditioning. This is due to continual changes in the drugs supply, the hospital formulary and prescription habits on the one hand, and to shifting process bottlenecks on the other hand. The program goes on in 2018.

PP 14 | A retrospective analysis of pharmaceutical interventions concerning QT-prolongation and exploration of implementation of a validated risk score in a teaching hospital

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OBJECTIVE

Prolongation of the QT-interval (and risk of Torsade de Pointes (TdP)) is often drug-related. Our hospital guidelines advise an ECG when a patient is on at least 3 drugs (mentioned on a limitative list) known to prolong QT-interval, regardless of patient-related risk factors. The objective was to evaluate pharmaceutical interventions and to explore the implementation of a validated risk-score (RISQ-PATH)[1] in adults hospitalized in a tertiary hospital.

METHODS

A database of pharmaceutical interventions (Oct-Dec 2016) was used and clinical parameters from the patient's medical files were obtained. The (non-)acceptance was checked (ECG 72h post intervention). For each patient the RISQ-PATH score was calculated. A panel of cardiologists was consulted to evaluate 30 randomly chosen cases and judge pharmaceutical

recommendations.

RESULTS

A total of 1149 prescriptions was evaluated (900 patients ≥ 18y). According to the current guideline, for 300/1149 (26.1%) medication orders, a recommendation should have been given. However, in only 36 (12.0%) this recommendation was mentioned in the patient's file. Only 1 recommendation (2.8%) was accepted. Of the adult population,740 (82.2%) had a RISQ-PATH model score of ≥0.035. Evaluating the cases, the panel scored most recommendations as significant or very significant (14/14;9/14) and would fully accept or partially accept most of the recommendations (14/14;12/14). For the 16 cases which did not receive a recommendation, both raters would have intervened more frequently than current guidelines advise.

CONCLUSION

To date, knowledge of clinical relevance of drug-related QT-prolongation and TdP is limited. Pharmaceutical recommendations are rather little given and poorly accepted. Identification of high-risk patients based on current guidelines is insufficient and the estimation of the patient specific risk is time consuming when using risk scores[1]. Cardiologists would more frequently recommend an ECG and monitor electrolytes intensively for at risk patients. A more sensitive risk score could be developed in prospective research.

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PP 15 |Therapeutic adherence of chronic myeloid leukemia patients to nilotinib or dasatinib in a Belgian university hospital: a pharmacist's perspective

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BACKGROUND AND AIM

Success of oral therapy demands a huge responsibility of the patient to take his medication as prescribed. Studies with imatinib have proven that suboptimal responses were significantly higher in chronic myeloid leukemia (CML) patients with adherence rates below 90 %[2]. This study wants to evaluate the therapeutic adherence of CML patients in UZ Gent.

METHOD

The Medication Possession Ratio (MPR) was calculated for dasatinib or nilotinib delivered from 1/1/2013 until 29/2/2016 to CML patients treated in UZ Gent.

RESULTS

Forty eight treatment periods were evaluated with lengths varying from 24 to 1164 days. Patients were adherent in 8 (44.4%) nilotinib and 12 (40.0%) dasatinib treatments. MPRs below 90 % were observed in 5 nilotinib and 2 dasatinib treatments. In 43.8% of the treatments an excess of medication was delivered by the pharmacy, meaning that the patients got more refills than needed. The cost of the excess pills for some patients ranged from 16021,00€ (dasatinib) to 27073,53€ (nilotinib).

DISCUSSION AND CONCLUSION

This study showed that in 14,6 % of the treatments the patient did not have enough medication (< 90%) to adhere to the therapy as prescribed by the hematologist. However, an excess of refill was delivered by the pharmacy to almost half of the patients, but this doesn't implicate good adherence. These results demonstrate the need for a tool to keep up the balance between the number of pills prescribed and the exact number necessary for therapy. These data should allow the clinical pharmacist to retrieve information from the patient concerning his behavioral pattern and contribute to the empowerment of the patient by positive feedback. In addition, it should reduce unnecessary costs by preventing excess delivery of expensive medication.

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