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Vlaamse Vereniging van Ziekenhuisapothekers

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Vlaamse Vereniging van Ziekenhuisapothekers

Hospital Pharmacists' Day 2020
February 4, 2020
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 February 4, 2020.

For this event, fourteen abstracts were submitted. Six abstracts were accepted for both oral and poster presentation. Twelve abstracts were accepted for poster presentation. This publication contains nine 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'.

ORAL AND POSTER PRESENTATIONS

POSTER PRESENTATIONS

ORAL AND POSTER PRESENTATIONS

OP 1 | Optimalisatie van implantatenbeheer

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ACHTERGROND EN DOELSTELLING

Het implantatenbeheer van het Universitair Ziekenhuis Antwerpen ondervond verschillende tekortkomingen.
Enerzijds was er geen digitale traceerbaarheid mogelijk.
Anderzijds was er de administratieve complexiteit, welke onder andere geïllustreerd werd door een drievoudige registratie van verbruikte implantaten door onaangepaste software. Bij de eerste registratie werd er een bestelbon opgemaakt van de verbruikte implantaten. Vervolgens gebeurde na de bestelling nog een manuele voorraadverplaatsing van de apotheek naar de desbetreffende dienst. Tenslotte was er nog een derde registratie nodig voor het maken van het voorschrift.
Hierdoor was er een laattijdige aanrekening van implantaten. Er was steeds een post-registratie van implantaten. Ook had de apotheek geen overzicht van de decentrale voorraden.
Het optimaliseren van dit implantatenbeheer past in het prioriteitsdomein van het UZA; namelijk kwaliteit, patiëntveiligheid en voldoen aan de JCI-normen. Er werd daarom een project uitgeschreven met 3 prioriteiten.
Enerzijds het afschaffen van gescheiden registratie. Anderzijds de vereenvoudiging van het logistieke proces, met nadruk op de administratieve afhandeling. En tenslotte het systematisch en eenmalig registreren van lot- en serienummer van implantaten om de traceerbaarheid van implantaten te garanderen.

METHODEN

De nieuwe registratie- en configuratiefunctie is gebouwd om het implantatenbeheer in het Universitair Ziekenhuis Antwerpen, een tertiair ziekenhuis met 573 bedden, eenvoudiger te laten verlopen.
In de eerste fase werd er een nieuwe registratiefunctie ontworpen en gebouwd, waardoor post-registratie van implantaten niet meer nodig is. Het administratief proces vergt nu slechts 1 registratie, welke resulteert in een onmiddellijke aanrekening en bestelling van het implantaat.
In de tweede fase werd de digitalisatie van prothesebladen gerealiseerd. De dienst orthopedie was pilootdienst en verdere uitrol naar alle disciplines is noodzakelijk.
In de derde fase werd er een nieuwe configuratiefunctie gecreëerd. ICT bouwde een BESCO-database importfunctie en paste de interface tarificatie aan.

RESULTATEN

Om de impact van de administratieve vereenvoudiging op de pilootdienst te bepalen, werd het aantal dagen bepaald tussen de dag van de orthopedische ingreep en de aanrekening van het voorschrift tijdens de maand september in 3 opeenvolgende jaren (2017 -2018 -2019). De cijfers in de grafiek zijn van 3 artsen die de meeste operaties uitvoeren op dienst orthopedie.
De resultaten tonen aan dat voor de implementatie van de interventie, in september 2017 en september 2018, slechts 20% van de voorschriften werden aangerekend binnen 1 maand na de orthopedische ingreep. Dit zijn reproduceerbare resultaten voor 2017 en 2018.
Na de administratieve vereenvoudiging (start november 2018), in september 2019, werden 70% van de voorschriften aangerekend binnen dezelfde maand. De stijging is het grootst voor de periode binnen 2 dagen na de ingreep. Voor deze periode nam het aantal opgestelde voorschriften toe van 10% tot bijna 50%.

DISCUSSIE EN CONCLUSIES

De ziekenhuisapotheker speelt een centrale rol in het implantatenbeheer, en kan door optimalisatie van het implantatenbeheer bijdragen aan een hogere patiëntveiligheid en een betere kwaliteit van zorgverlening.
Er werd een administratieve vereenvoudiging gerealiseerd door implementatie van een nieuw registratie- en configuratiefunctie. Hierdoor zijn er minder administratieve fouten en verloopt de aanrekening van implantaten sneller en correcter, zoals wordt weergegeven in de figuren.
Daarnaast is er een controle mogelijk op de consignatie-en andere decentrale voorraden van implantaten. Tenslotte kunnen implantaten getraceerd worden conform de toekomstige wetgeving.

OP 2 | Standaardisatie van de opleidingsmomenten binnen de ziekenhuisapotheek met focus op Blended Learning.

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ACHTERGROND EN DOELSTELLING

Het weinig dynamisch opleidingsgebeuren en geringe eigenaarschap bij de werknemers binnen de apotheek van het vzw Jessa ziekenhuis doet de nood aan standaardisatie van de opleidingsmomenten toenemen. Aan de hand van een literatuuronderzoek werd een opleidingsstrategie uitgewerkt met focus op 'Blended learning'. [1,2,3,4,5]
In dit onderzoek werd gekeken naar de impact van de opleidingsstrategie binnen het domein van backoffice klinische validatie. De opleiding doet beroep op de SAFE-lijsten, wat staat voor 'systematisch aanwenden van farmaceutische validatie in het elektronisch medisch voorschrift'.[6]

METHODEN

De SAFE lijsten van vier farmacologische klassen werden omgezet in e-learning modules, namelijk pijn en koorts, antifungale middelen, anti-epileptica en anticoagulantia. Casusmateriaal werd voorzien door klinische apothekers met expertise binnen het domein. Het onderzoek was opgebouwd uit twee fasen elk voorafgegaan door een pilootstudie. In fase 1 werden interventies vergeleken tussen de gouden standaard en de apotheker alvorens het afronden van de opleiding. Fase 2 maakte een vergelijking tussen de gouden standaard en de apotheker na afronden van de opleiding. De twee fases werden op analoge wijze georganiseerd voor elk van de gegeven SAFE-lijst opleiding. Het initiëren en onderzoeken van de vier SAFE-lijst opleidingen kende een niet-simultaan en parallel verloop.

Evaluatie van de impact in termen van effectiviteit van de opleiding gebeurde door middel van de Mc Nemar en de Chi-kwadraat test.

RESULTATEN

Voor een eerste SAFE lijst opleiding Pijn & Koorts werd een significant verschil aangetoond tussen het aantal interventies door de gouden standaard en de apothekers voorafgaand de opleiding ($p<0,05$). Het verschil tussen het aantal interventies na het afronden van de opleiding bleek ook significant te zijn ($p<0,05$). Tot slot werd er een significant verschil aangetoond met de Chi kwadraat test tussen de apothekers voor en na het afronden van de opleiding ($p= 0.003$).

DISCUSSIE EN CONCLUSIE

Een eerste opleiding wees op een gunstige impact in termen van effectiviteit. Doch werd er in fase 2 nog steeds een significant verschil waargenomen tussen de gouden standaard en de apothekers. Een verklaring zou zijn dat interveniëren ondermijnd wordt door de werkdruk in de real life setting. Verder onderzoek zal uitwijzen of deze impact of de effectiviteit herhaald kan worden voor de overige SAFE lijsten.

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OP 3 | Geneesmiddeleninteractie-checker als safetytool in het Universitair Psychiatrisch Centrum Duffel

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ACHTERGROND EN DOELSTELLING

De farmacologische behandeling van psychiatrische patiënten kan aanleiding geven tot potentieel ernstige geneesmiddeleninteracties1. Integratie van een interactietool in het voorschrijfprogramma kan helpen deze te voorkomen. In het Universitair Psychiatrisch Centrum (UPC) Duffel was hiervoor nog geen ondersteunende tool. Een interactiechecker gekoppeld aan het EMV werd daarom multidisciplinair getest.

METHODE

Een single center, prospectieve multidisciplinaire observationele studie werd uitgevoerd. Gedurende 11 werkdagen werd de MedCheck interactietool gekoppeld aan Medicatiebeheer van Infohos. Volgende data werden verzameld en geanalyseerd in Excell: het aantal geneesmiddelen en aantal interacties per patiënt, de interagerende geneesmiddelen met hun ATC code, het interactieniveau, de soort interactie, en ten slotte het al dan niet nuttig zijn van de interactie pop-up voor klinisch apotheker versus psychiater. Deze resultaten werden multidisciplinair besproken en vergeleken met adviezen aanbevolen in de Stockley.

RESULTATEN

Bij 80 patiënten werden 335 interacties gedetecteerd bij 633 voorgeschreven geneesmiddelen, waarbij 35 (10 %) met ernstige gevolgen mogelijk. Deze laatsten groep hadden agranulocytose (64%) en QT-verlenging (35%) mogelijks tot gevolg. Bij 199 interacties (59%) werd er een opvolging van de patiënt aanbevolen. Bij vergelijking met de evidentie in de Stockley bleek 40% van de teruggevonden interacties gebaseerd was op theorie; 27 % op klinische casussen; 16% op basis van een studie en 17 % van de interacties waren niet terug te vinden in de Stockley. Uit de multidisciplinaire overleg bleek dat interacties met risico tot agranulocytose reeds werden opgevolgd. Er was geen uniform therapeutisch management bij risico op QT-verlenging. De haalbaarheid en de acceptatiegraad van de Medcheck werden uniform als positief onthaald.

DISCUSSIE

Zowel de psychiaters, de klinische apotheker als verpleegkundigen vonden de interactiemodule een nuttige ondersteunende tool. Bijkomend heeft deze studie aangetoond dat er noodzaak is tot ontwikkeling van procedure voor het managen van interacties met risico op QT-verlenging.

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OP 4 | What happens after ICU discharge? A within-hospital seamless care analysis of antimicrobial therapy

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BACKGROUND AND AIM

Many patients require continued antimicrobial therapy after intensive care unit (ICU) discharge. Besides appropriate selection, dosing and adequate duration are cornerstones for infection therapy. In Ghent University Hospital, medical and surgical ICU (MICU/SICU) teams review antibiotic treatment adequacy on a daily basis. After ICU discharge, a hospitalwide

multidisciplinary infectious diseases team (MIT) is available for advice. The aim of this study was to analyse if ICU initiated antimicrobial treatment continued in the ward was compliant with respect to dosing and recommended duration.

METHOD

A retrospective analysis of ICU discharge letters of consecutively discharged MICU and SICU patients requiring continued antibiotic therapy was performed (rationale for, dosing and recommended duration of ICU initiated therapy). A panel (ICU physician & ICU clinical pharmacist) evaluated whether antibiotic treatments following ICU were compliant with ICU discharge recommendations. Antibiotic treatments which diverted from these recommendations due to well-documented changes in clinical evolution were also considered as compliant. Ethical committee approval was obtained. Main outcome measures were completeness of ICU discharge letter defined as containing a dosing scheme and recommendation for total duration; compliance of subsequent antimicrobial therapy (posology/duration); number of patients in which MIT interfered.

RESULTS

Between Jan – Mar 2016 and Nov 2017 – Mar 2018, 380 ICU patients were discharged on antimicrobial treatment: 66.7% male; median age 63 [IQR 51-72] years; median SOFA at ICU admission 5 [2-8]; median ICU stay 2.8 [1.4 – 4.7] days. Patients were primarily admitted for respiratory (23%), gastro-intestinal (22%) or cardiovascular reasons (17%). Five-hundred and seven antimicrobials (empirical:targeted 3:2) were identified. ICU letters specified dosing in 468 (92%) but mentioned a recommended duration for 115 antimicrobials (23%) only. For 34 antimicrobials (30%) total duration following ICU discharge deviated from discharge recommendations, for which MIT intervened 7 times. Overall compliance was 91%.

CONCLUSION

Although patients completed their ICU initiated therapy correctly in 91% of the cases, a recommendation on duration was only mentioned in 23% of discharge letters.

OP 5 | Retrospective evaluation of teicoplanin dosing,therapeutic drug monitoring practices and target attainment in a Belgian tertiary hospital

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BACKGROUND AND OBJECTIVE:

Teicoplanin is a glycopeptide antibiotic used for the treatment of Gram-positive infections. Trough levels are monitored in routine practice to ensure efficacious treatment. To date, the starting dosing regimen at the Ghent University Hospital consists of a loading dosing scheme of three consecutive doses (1600 mg, 800 mg and 400 mg) administered with a 24 h dosing interval followed by trough-guided dosing (therapeutic target: 20–30 mg/L for common infections and[30 mg/L for serious infections).

SETTING AND METHOD:

Over a one-year period dosing regimens, therapeutic drug monitoring (TDM) practices and trough levels were retrospectively reviewed in 50 hospitalized, non-critically ill adult patients treated with teicoplanin.

MAIN OUTCOME MEASURES:

- appropriateness of initiated dosing regimen.
- therapeutic, subtherapeutic and potentially toxic trough levels on day 3 of the treatment.
- number of therapies failed to achieve the target concentration during the treatment.
- number of days to achieve the target concentration.
- appropriateness of timing of trough level monitoring.

RESULTS:

Fifty-five therapies in 50 patients were evaluated. A wrong dosing regimen was initiated in 11 (22%) therapies.

From the 44 correctly initiated and evaluable dosing regimens, 2.2% resulted in a therapeutic, 79.5% in a subtherapeutic and 2.2% in a potentially toxic trough level on day 3 of the treatment. Nine-teen (43.1%) of these therapies failed to achieve the target concentration during the treatment. In 25 (56.8%) therapies the target concentration was achieved but it took 5 days (median) for the common infections and 13 days (median) for the serious infections.

Trough level monitoring was minimally needed a 188 times from which 53.2% was monitored at the appropriate time, 31.9% too late (median of 1 dose, range: 1–1) and 1.6% too soon; in 13.3% of cases no trough level was taken.

A dose adjustment was justified in 166 cases from whom 59.3% were performed. 45.8% of the dosing adjustments were performed at the appropriate time, 5.6% too late ((median of 1 dose, range: 1–2) and 40.7% was not performed at all.

CONCLUSION:

A poor target attainment rate was observed using the current teicoplanin hospital loading dose scheme. Based on these results, higher doses should be used. This study also demonstrates thestringent need for thorough education on TDM guidelines to improve teicoplanin treatment.

OP 6 | Appropriateness of vancomycin dosing and therapeutic drug monitoring practices in a Belgian tertiary hospital.

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BACKGROUND AND AIM

Vancomycin is a commonly used glycopeptide antibiotic to treat Gram+ infections. Trough level monitoring is used in routine practice to ensure efficacious treatment and minimize toxicity. The aims of this study were to (i) evaluate the compliance of vancomycin prescribing and therapeutic drug monitoring (TDM) in non-critically ill hospitalized children and adults, with current hospital guidelines and, (ii) to evaluate target attainment rates using current dosing regimens.

METHODS

A retrospective, observational, monocentric study was conducted. In adults, the evaluated starting dosing regimen consisted of a loading dose followed by a continuous infusion,

dependent on patient weight and estimated renal function (target trough level range of 20-25 mg/L for common infections and 25-35 mg/L for serious infections). In children, the evaluated dosing regimen consisted of an intermittent dosing regimen given every 6h (Target trough level range: 10-15 mg/L)

RESULTS

One hundred twenty-four therapy episodes in 50 children (9.9 years; IQR: 4.9-13.8 years) and 50 adults (mean age: 58 years; IQR: 43-67 years) were evaluated. In 29% of therapy episodes, a wrong dosing regimen was initiated. From the 85 correctly initiated and evaluable dosing regimens, 19.5% resulted in a therapeutic, 75.3% in a subtherapeutic and 5.2% in a supratherapeutic trough level. Trough level monitoring was minimally needed a 495 times from which 67% was monitored at the appropriate time, 21.6% too late and 1.5% too soon; in 9.9% of cases no trough level was taken. A dose adjustment was justified in 430 cases: 52.2% was done at the appropriate time, 9.6% too late and 38.1% was not performed at all. In 28 cases, the dose adjustment could not be justified from the reported trough levels. 282 dose adjustments were evaluable: 34.7% resulted in a therapeutic, 42.1% in a subtherapeutic and 23.2% in a supratherapeutic level; 12 dose adjustments were not evaluable.

DISCUSSION AND CONCLUSION

This study demonstrates the stringent need for revision of currently used dosing regimens and implementation of educational interventions to increase adherence to hospital TDM guidelines. Moreover, this study highlights the value of TDM in therapy optimisation.

POSTER PRESENTATIONS

PP 1 | Pharmacist-led medication review in geriatric inpatients: evaluation of drug-related problems and recommendations.

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BACKGROUND/AIM

Drug-related problems (DRPs) are more prevalent in older patients and have been associated with poor health outcomes. Pharmacist-led medication reviews have been proposed to optimize medication use by detecting DRPs and recommending interventions. This study aimed to evaluate the clinical pharmacists' (CPs) recommendations and to determine to what extent these recommendations correspond to potentially inappropriate prescribing (PIP) identified by explicit tools.

METHODS

A retrospective analysis of CPs' recommendations on the geriatric ward of the Ghent University Hospital. The recommendations were classified according to the underlying DRP, acceptance rate and drug class. Two explicit tools (STOPP/START and GheOP³S) were used to describe PIP-prevalence at hospital admission and discharge.

RESULTS

A total of 185 patients were included with a mean age of 83.0±5.7 years and a median length of stay of 13 (IQR 9–21) days. Two-thirds of patients came from home and took on average 9±4 drugs. The CPs identified about two potential DRPs per patient, which most frequently concerned inappropriate dose (29.4%), underuse (24.3%) and overuse (14.5%). Drugs for the gastrointestinal tract, antithrombotic drugs and antimicrobial agents were most frequently involved and the acceptance rate was 78.8%. At discharge, PIP-prevalence decreased according to STOPP/START (84.3% to 76.8%) but increased according to GheOP³S (76.8% to 83.6%), which could be explained by the increase of the anticholinergic burden mainly because tramadol and oxycodone were prescribed during hospitalization. Only 3.5% to 8.2% of the CPs' recommendations would be identified by using the explicit tools.

DISCUSSION/CONCLUSION

A pharmacist-led medication review in geriatric inpatients led to about two recommendations per patient which were highly accepted. The majority of DRPs identified by the CPs were not associated with explicit criteria, but assessment of the anticholinergic burden at discharge might be useful. These findings suggest that explicit criteria should preferably be combined with an implicit approach.

PP 2 | Estimating the survival prognosis of patients with advanced gastro-intestinal maligancy on home parenteral nutrition: a retrospective, monocentric study

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KEYWORDS

Home Parenteral Nutrition, survival estimation, Digestive Oncology

BACKGROUND AND AIM

The initiation of home parenteral nutrition (HPN) in advanced malignancy patients is highly controversial. Guidelines generally suggest to reserve this therapy for patients who are expected to survive for >2-3 months, due to a negative risk-benefit when estimated survival is less.[1],[2] Since correct patient survival estimation is inherently difficult, we sought to investigate the proportion of advanced cancer patients receiving HPN in UZ Leuven surviving >2-3 months. Furthermore, in the absence of good performing prediction models in this setting, we wanted to develop and validate a survival model that could reliably estimate 2-and 3-month patient survival.[3]

METHODS

Retrospectively, during 2008-2016, survival proportions of patients with advanced gastro-intestinal malignancy receiving HPN were examined. Agreement was assessed between observed survival and the current in-hospital survival prediction method (i.e. physician's clinical judgement). Moreover, through multivariable logistic regression on variables gathered from aforementioned patient set, de novo 2-and 3-month survival prediction models were constructed and validated.

RESULTS

Respectively 65,2% and 46,4% of the included patients (n=250) actually met the suggested 2-and 3-month survival criteria. Concerning survival prediction, clinicians predominantly tended to overestimate survival. Regression analysis identified four variables independently associated with 2-month survival: Karnofsky Performance Score (KPS), Glasgow Prognostic Score (GPS), gender and serum sodium, while the 3-month model consisted of three variables: KPS, GPS and serum urea. 2-and 3-month model validation in an independent testing set (n=99) showed satisfactory discriminatory abilities (AUC-ROC estimates: 0,693(SE:0,059) and 0,716(SE:0,053), respectively), with the best results obtained through application of the 3-month model at a predefined survival probability threshold of 0,25 (sensitivity=0,96; specificity=0,25; positive predictive value=0,65; negative predictive value=0,83).

DISCUSSION & CONCLUSIONS

Correct estimation of patient survival length remains an intrinsically difficult task. Further optimization of the constructed prediction models, possibly through prospective incorporation of additional survival predictors, is needed to improve their clinical utility.

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PP 3 | Incidence and risk factors for prosthetic joint infection within 90 days after hemiarthroplasty for femoral neck fractures in the elderly: preliminary data of a single centre experience

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BACKGROUND & AIM

Elderly with a hip fracture are at substantial risk for health complications[1]. In the setting of closed femoral neck fractures after low-impact trauma in the elderly, often treated with a hemiarthroplasty, literature with respect to prosthetic joint infection (PJI) is scarce. The objective of this study was to investigate the incidence of PJI in this elderly population. Furthermore, risk factors for PJI after hemiarthroplasty were identified.

METHODS

In this retrospective monocentric study, medical files of elderly (≥ 75 years) patients with closed femoral neck fractures and treated with a hemiarthroplasty were evaluated. Follow-up was 90 days. In order to identify independently associated factors for infection, a Cox proportional hazards regression analysis was applied.

RESULTS

Between January 2006 and July 2017, a consecutive series of 745 patients (mean age 85 ± 5 years, 221 (29.7%) men) was treated with a hemiarthroplasty. Thirteen (1.7%) patients developed a PJI and 120 (16.1%) died due to other reasons than infection. The perioperative antimicrobial prophylaxis (PAP) regimens consisted of cefazoline or clindamycine. Single and repeated PAP administrations (q8h) were observed. Higher body weight (HR=1.05 (95% CI 1.008-1.094) (p=0.020)), systemic corticoid use (HR=4.790 (95% CI 1.275-17.997) (p=0.020)) and the need for transfer to the intensive care unit (ICU) for other reasons than infection (HR=8.692 (95% CI 2.353-32.106) (p=0.001)) were independently associated with a PJI within 90 days.

DISCUSSION & CONCLUSIONS

In this fragile trauma population, the observed 1.7% PJI incidence within 90 days is rather low compared to the incidence rate of 2.3 – 4.5% in literature [1-4]. Our preliminary data show that the number of PAP administrations does not influence the risk of PJI. Patients with a higher body weight, with systemic corticoid use or with postoperative ICU transfer had a higher risk of developing a PJI and should be monitored closely for infection.

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