The most common outcomes for interventions were reduction of preventable ADEs (45%) and optimisation of the therapeutic effects of the drugs that were administered (29%).

Conclusion and relevance This study demonstrated that adding EM pharmacists to the ED decreased significantly the rate of medication errors and potenital ADEs. Also, working side-by-side would explain the good acceptance of the CPI by ED physicians. However, further study is needed to demonstrate the clinical pharmacist's contribution to the improvement of clinical and economic outcomes more comprehensively.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-122 OVERVIEW OF THE IMPACT OF PENICILLIN ALLERGY LABELS ON ANTIBIOTIC USE IN THE EMERGENCY DEPARTMENT

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Background and importance Many patients claim to be allergic to penicillin (Pen-A); however, only 10–25% of these are truly penicillin-allergic. It needs to be established if they are truly allergic (type-1 allergy) in order to to indicate alternative antibiotics. Moreover, patients who do not have a type-1 allergy can safely receive cephalosporins or carbapenems, but having a label of Pen-A may be associated with prescription of broad-spectrum antibiotics (BSA), hospital stay duration and readmission.

Aim and objectives Assess the impact of Pen-A labels on antibiotic in an emergency department (ED).

Identify patients who remain appropriate candidates to receive beta-lactam therapy or cephalosporins, are mislabelled or may be dis-labelled with penicillin allergy skin testing (PST).

Material and methods Retrospective cohort study with ED cases treated with BSA from January 2020–January 2021.

Pen-A were identified by assessing all allergies in the electronic medical record. Each patient with a Pen-A label was matched for age, gender, BSA prescribed in ED and previous exposures to penicillin or cephalosporins.

PST may be considered if they meet any of the criteria recommended: history of Pen-A >10 years ago, frequent antibiotic use required, immunosuppressed state and history of infections caused by multidrug-resistant (MDR) bacteria.

Results A total of 287 patients (mean age 62 years; SD 16 years; 53% men) were enrolled.

The main antibiotic prescribed in Pen-A patients were quinolones (49%) and macrolides/lincosamides (21%). In 88% cases, antibiotic hospital guides suggested treatments with a cephalosporin.

Of 46 patients with Pen-A, 24 had non-type 1/non-severe reaction, 6 type 1 allergy/severe reaction, 4 without reaction (mislabelled) and 12 not documented. 37(80.4%) patients were treated previously with cephalosporins, whereas only 2 patients presented cross-reactivity. 30 (65.2%) patients met criteria to consider referring to PST, of which 67% had history of Pen-A >10 years ago, 60% required frequent antibiotic use,13% were immunosuppressed and 9% had infections caused by MDR bacteria.

Conclusion and relevance Most patients, around 80% would have been spared the use of BSA if the Pen-A label had been assessed. Furthermore, most patients who had received cephalosporins did not have cross-reactivity. The introduction of PST could help correctly verify Pen-A in 65.2% patients. Hereinafter, ED pharmacist will be prepared to evaluate possible Pen-A to reduce the use of BSA and de-label when necessary.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-123 PERFORMANCE OF MOST COMMONLY USED EQUATIONS TO ESTIMATE GLOMERULAR FILTRATION RATE IN CRITICALLY ILL PATIENTS

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Background and importance Estimating glomerular filtration rate (GFR) in critically ill patients is challenging due to fluctuations in kidney function and creatinine production. Creatinine clearance computed from a 24-hour ($CrCl_{24h}$) urine collection cannot always be performed. Therefore, equations based on serum creatinine are commonly used to estimate GFR. However, it is still questionable which formula performs best in this setting.

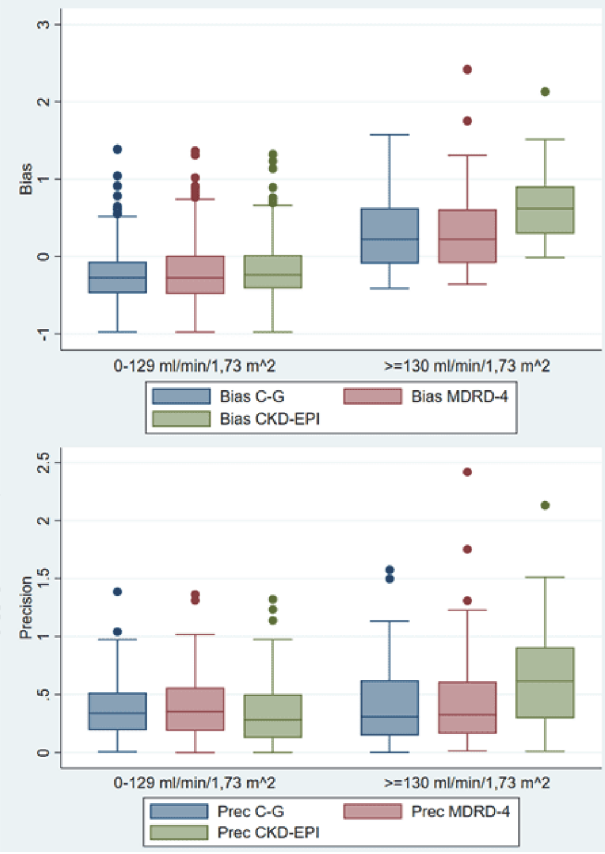
Aim and objectives We aimed to assess the performance of different serum creatinine-based equations to estimate GFR in critically ill patients.

Material and methods Observational retrospective study conducted in four intensive care units of a tertiary hospital from January to September 2020, consecutive patients with a measured $CrCl_{24h}$ were included. $CrCl_{24h}$ was compared to the most commonly used GFR estimating equations: Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI), Modification of Diet in Renal Disease (MDRD-4) and Cockcroft–Gault (CG). Pearson coefficients were estimated to evaluate the relationship between $CrCl_{24h}$ and CKD-EPI, MDRD-4 or CG. Bland and Altman plots, bias and precision were performed to contrast $CrCl_{24h}$ values with estimated GFR. Data were stratified into patients with $CrCl_{24h}$ between 0 and 129 mL/min/1.73m^2 and patients with an augmented renal clearance (ARC) (GFR $\geq$130 mL/min/1.73m^2).

Results 261 patients were included in the study (60.2% male, with a mean±SD age of 62±15 years and a serum creatinine of 1.23±1.00 mg/dL).

For the subgroup with GFR between 0 and 129 mL/min/1.73m^2, Pearson coefficients estimated for CKD-EPI, MDRD-4 and CG were 0.729, 0.637 and 0.680, respectively. Bland and Altman plots showed homogenous distribution for CKD-EPI and CG but were less homogenous for MDRD-4. No statistically significant differences were found between equations in terms of bias and precision.

For the subgroup with GFR $\geq$130 mL/min/1.73m^2, Pearson coefficients estimated for CKD-EPI, MDRD-4 and CG were 0.312, 0.329 and 0.388, respectively. Bland and Altman plots showed homogenous distribution for CG and more heterogenous distribution for CKD-EPI and MDRD-4. Bias was statistically different between CKD-EPI and both CG and MDRD-4 (p=0.0032) but precision was not (Figure 1).



Abstract 4CPS-123 Figure 1

Conclusion and relevance According to the data, no differences were found between formulas to estimate GFR for critically ill patients with a $CrCl_{24h}$ between 0 and 129 mL/min/1.73m^2; whereas for patients with ARC, CG and MDRD-4 seemed to be more appropriate for estimating GFR.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-124 COST OPTIMISATION PLAN IN IMMUNOTHERAPY

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Background and importance Three years ago, posology of nivolumab 3 mg/kg was modified in the Summary of Product Characteristics (SmPC) for a fixed dose (flat-dose) of 240 mg every 2 weeks or 480 mg every 4 weeks after showing equivalence.

Aim and objectives The aim of the study was to assess the potential cost savings if we used individualised dose by weight (3 mg/kg) and apply flat-dose (240 mg or 480 mg) in those patients weighing 80 kg or more.

Material and methods Retrospective study conducted in a second-level general hospital that included all patients treated with nivolumab during 1 year (2020).

A database was designed with the following variables: age, sex, weight, diagnosis, dosage regimen and drug costs expressed in laboratory sale price.

After applying the cost optimisation plan, the dosage of the patients was grouped according to weight: ≥80 kg use of flat-dose and <80 kg use of individualised dose of 3 mg/kg.

Costs of administering nivolumab according to an individualised dose of 3 mg/kg and the flat-dose regimen were calculated.

Results During the study period, 37 patients were treated with nivolumab, 29 received a fixed dose of 240 mg every 2 weeks and eight fixed doses of 480 mg monthly. Patients' mean weight was 71.1 kg (range 52–119). Drug's total cost was € 1 258 560 per year.

Applying the individualised dose of 3 mg/kg in all patients, the cost would be reduced to € 1 177 620, generating a saving of € 80 940.

Applying the individualised dose of 3 mg/kg and scheduling treatment administration on a single day a week, the cost would be € 1 116 558.75, obtaining a saving of € 142 002.

In addition to the above measures, setting the dose at 240 mg in those patients weighing ≥80 kg, the cost would be reduced to € 1 090 096.50, generating a saving of € 168 463.50. Applying this method, based on body weight, only six patients would maintain flat-dose while 31 would require an individualised dose.

Conclusion and relevance The use of individualised nivolumab doses may be a good strategy for optimising treatment costs. The combined use of flat-dose with individualised dose based on patients' weight would reduce the cost associated with nivolumab by 13.4%, corresponding to about € 168 000 per year.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-127 THERAPEUTIC DRUG MONITORING WITH BIOLOGICAL DRUGS IN THE TREATMENT OF INFLAMMATORY BOWEL DISEASE

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Background and importance Inflammatory bowel disease (IBD) is characterised by a chronic inflammation of the gut mucosa. About one-third of patients show primary non-response to biological agents, and up to 50% after an initial clinical response discontinue therapy due to secondary loss of response or a serious adverse event.

Therapeutic drug monitoring (TDM) plays an important role in optimising therapy for these patients.

Aim and objectives Assessing the outcome of optimising biologic drug therapy regimens based on serum dosing results in IBD patients.

Material and methods An observational, descriptive and retrospective study was conducted from 1 April 2018 to 31 August 2021. It included all the patients with IBD treated with biological agents (adalimumab, infliximab and vedolizumab), and this study was based on information contained in pharmaceutical records and clinical files.

A total of 71 patients were included. The study analysed the average treatment times of each drug in patients considered primary non-responders (PNR), as well as patients with secondary loss of response (SLR) to biological agents and the