Conclusion and Relevance The TWI can participate in acute kidney injury, particularly in high risk patients. Clinical pharmacists play an important role detecting patients at increased risk of AKI, preventing adverse events due to TW interaction, monitoring AKI biomarkers and recommending deprescription of possible nephrotoxic drugs.

REFERENCES AND/OR ACKNOWLEDGEMENTS
Conflict of Interest No conflict of interest

4CPS-163 CYTOCHROME P450 2C19 GENOTYPING FOR PERSONALISATION OF PROTON PUMP INHIBITOR THERAPY

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Background and Importance Proton pump inhibitors (PPIs) are hepatically metabolised primarily by the cytochrome P 450 2C19 enzyme. PPIs are generally considered effective, however CYP2C19 genetic polymorphisms may result in patients not responding appropriately to treatment. CYP2C19 genotyping and interpretation of results may be a contribution by pharmacists towards personalisation of PPI therapy.
Aim and Objectives The aim was to determine the prevalence of CYP2C19 genetic polymorphisms in a cohort of patients showing PPI therapy resistance.
Material and Methods Patients diagnosed with gastro-oesophageal reflux disease or peptic ulcer disease and with documented PPI therapy resistance were identified using ambulatory reflux monitoring and endoscopy databases. An EDTA blood sample was collected from each patient, followed by genomic DNA extraction with the QIAcube (Qiagen). CYP2C19 genotyping was performed with real-time polymerase chain reaction on the GeneAmp PCR System 9700 thermal cycler and reverse hybridisation using the TwinCubator with the PGX-CYP2C19 StripAssay® (ViennaLab). Genotypes (phenotypes) were classified as: *1*1 (normal metabolisers, NMs), *1*17 (rapid metabolisers, RMs), *1*2 or *2*17 (intermediate metabolisers, IMs), or *2*2 (poor metabolisers, PMs). The 2021 Clinical Pharmacogenetics Implementation Consortium (CPIC) guideline was used for genotype-based dosing recommendations, which suggests that NMs may be at increased risk of therapeutic failure compared to IMs/PMs, RMs are at increased risk of therapeutic failure, while IMs/PMs have increased chance of efficacy but risk potential toxicity.
Results Thirty-eight patients were recruited; all Caucasian; 20 female, mode 50-59 years (n=11). Most patients (n=17) experienced reflux hypersensitivity, followed by persistent oesophagitis despite PPI treatment (n=10). PPI therapy included esomeprazole (n=20), omeprazole (n=16) or lansoprazole (n=2). The majority of patients (n=20) were genotyped as *1*1 (NM), followed by *1/*17 (n=7, RM), *2*17 (n=6, IM), *1*2 (n=4, IM) and *2/*2 (n=1, PM).
Conclusion and Relevance The majority of patients in this study may be (53% NMs) or are (18% RMs) at risk of therapeutic failure, and the guideline recommends considering a dose increase and monitoring for efficacy in these patients. In patients at risk of side-effects (29% IMs, PMs), the guideline suggests reduction in dose and continued monitoring for efficacy. Pharmacist-led CYP2C19 pharmacogenetic testing can be used a tool to guide dosing and monitoring in patients taking PPIs.

REFERENCES AND/OR ACKNOWLEDGEMENTS
Conflict of Interest No conflict of interest

4CPS-164 ADEQUACY REVIEW IN THE USE OF DAPAGLIFLOZIN FOR THE TREATMENT OF HEART FAILURE

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Background and Importance Protocol for use of dapagliflozin was approved for the adult treatment of symptomatic chronic heart failure with reduced left ventricular ejection fraction (LVEF) in patients uncontrolled with first-line therapies, angiotensin-converting enzyme inhibitors (ACEI) or angiotensin receptor blockers (ARB) with beta blockers, and second-line therapies, aldosterone antagonists.
Aim and Objectives To evaluate the use of dapagliflozin in the treatment of heart failure in hospitalised patients, assessing the degree of prescription compliance with the protocol agreed upon by the Pharmacy and Therapeutics Committee.
Material and Methods Retrospective observational study between December 2021 and April 2022 of hospitalised patients who started treatment with dapagliflozin. The study variables were: sex, age, reason for admission, presence of heart failure with LVEF <40%, concomitant treatment with ACEI, ARB, beta blockers, aldosterone antagonists, positive inotropics, sacubitril/valsartan or diuretics, and presence of diabetes with or without antidiabetic treatment. Clinical data were obtained from the Orion-Clinic® electronic medical record program.
Results In the period evaluated, 61 patients initiated dapagliflozin 10 mg per day, 42 men (69%), with a median age of 76 years (IQR 84-66). A total of 46 patients (75%) presented heart failure on admission and the rest were admitted for other cardiac pathology. Only 38 patients (62%) had an LVEF registry, of which 22 patients (36%) had an LVEF < 40% with a median LVEF of 32% (IQR 35-25). Forty-four patients (72%) were diabetic and 6 patients (17%) were treated with dapagliflozin in combination with metformin. For the study of concomitant treatments: 22 patients (36%) were prescribed ACEI/ ARB, 38 patients (62%) beta blockers, 8 patients (13%) positive inotropics, 21 patients (34%) aldosterone antagonist diuretics, 41 patients (67%) loop/thiazide diuretics and 9 patients (14.8%) sacubitril/valsartan. To highlight, 11 patients (18%) were being treated with the combination ACEI/ARA-II +beta blockers+aldosterone antagonist. Finally, only 35 patients (57%) continued with dapagliflozin as discharge treatment.
Conclusion and Relevance The degree of adequacy of dapagliflozin prescription to the approved protocol for use was high but an appreciable percentage of patients do not adhere to the inclusion criteria, indicating that the protocol

recommendations should be revised to ensure effective use of dapagliflozin. Only half of the patients who initiated treatment continued after discharge.

REFERENCES AND/OR ACKNOWLEDGEMENTS
Conflict of Interest No conflict of interest

4CPS-166 IMPLEMENTATION OF A LINEZOLID PHARMACOKINETIC MONITORING PROGRAMME

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Background and Importance Linezolid is an antibiotic that presents high inter- and intra-individual variability and therefore may compromise its clinical efficacy or increase the risk of associated toxicity.
Aim and Objectives To establish a programme for monitoring linezolid plasma levels that will allow us to proactively identify patients who can benefit most from its use and to evaluate its results in our centre.
Material and Methods A literature review was performed to define the criteria that allowed us to identify patients who were candidates for pharmacokinetic monitoring of linezolid.

We established the determination of plasma concentrations before the administration of the 5th dose and then periodically every 3-4 days until the end of treatment. The efficacy and safety criterion was to maintain the trough plasma concentration (Cmin) in the therapeutic range (between 2 and 8 mg/L).
Results The criteria selected for the identification of patients who were candidates to be part of the monitoring programme were: critical patients, transplanted patients, severe burns or cystic fibrosis, obese patients (BMI > 30), kidney failure (creatinine clearance < 30 ml/min) and liver failure (Child Pugh C), renal replacement therapies, prolonged treatments (> 3 weeks) and treatment with Glycoprotein-P inducers.

From January to April 2022, a total of 20 patients that met at least one of the aforementioned criteria were included in the programme . All patients started treatment in critical care units and the chosen route of administration was intravenous. Eighty-five percent of the patients were men, the median age was 69 years and the mean duration of treatment was 11.6 days.

A total of 50 samples were analysed (2.5 samples per patient). The mean Cmin was 5.3 mg/L. Thirty samples (60%) were out of therapeutic range.
Fifty pharmacokinetic reports were performed. In 60% of the cases, modifications of the dosing regimen were made: 17 were dose increases and 13 were dose decreases.
Conclusion and Relevance Incorporating this programme into clinical practice allows us to proactively identify the patients who could benefit most from linezolid monitoring.

The results demonstrate the high variability of linezolid plasma levels and the usefulness of dosing recommendations issued by the Pharmacy service to ensure that the Cmin remains within the therapeutic range.

REFERENCES AND/OR ACKNOWLEDGEMENTS
Conflict of Interest No conflict of interest

4CPS-167 CURRENT TRENDS IN THE USE OF CHECK-POINT INHIBITORS FOR NON-SMALL-CELL LUNG CANCER

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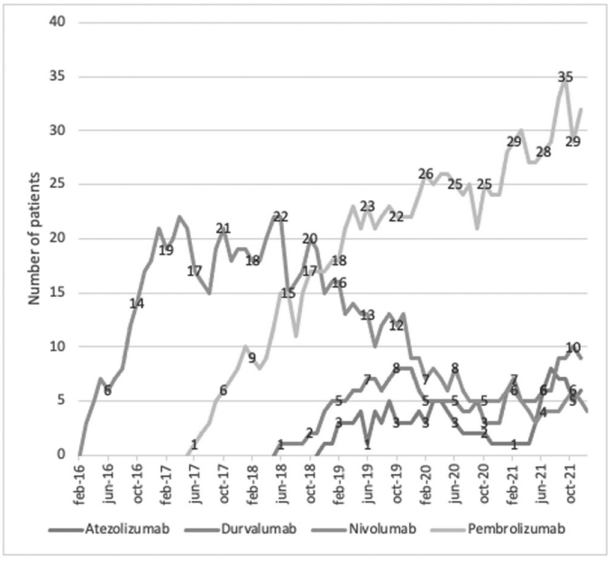
Background and Importance Over the last years, immunotherapy has changed the treatment paradigm of non-small-cell lung cancer (NSCLC). The number of patients treated with immune check-point inhibitors (ICI): atezolizumab, durvalumab, pembrolizumab and nivolumab has dramatically increased.
Aim and Objectives To evaluate the current trends in the use of ICI for NSCLC in a third level hospital.
Material and Methods A retrospective observational study was conducted, including patients with NSCLC who had received treatment between 2016 and 2021 with chemotherapy or ICI (atezolizumab, durvalumab, nivolumab or pembrolizumab). The data collected was drug, date and number of administrations, days between each administration and clinical response.
Results During the study period, there were 606 patients being treated for NSCLC, and 254 of them received ICI (41.91%).
Conclusion and Relevance The total number of patients treated with ICI for NSCLC has increased constantly during this period of time (49.15% increase between 2016 and 2021). Moreover, immunotherapy entail the treatment of nearly half of the NSCLC patients.

During the time period studied, the use of nivolumab has decreased, favouring pembrolizumab, probably because of the rise of its new approved indications. Secondly, the number of patients who have received atezolizumab and durvalumab has kept comparable.



Abstract 4CPS-167 Figure 1