patients. This increase in CCS patients in 2020 seems to explain the 10 year reduction in the median age of death and the increase in mortality. In 2020, the number of PN prepared by the PS nearly tripled in comparison with the same period in 2019. They were individually adapted to each patient's requirements, which led to a substantial increase in the care load and the preparation of the PN.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-220 PATIENT SATISFACTION WITH PHARMACIST EDUCATION ON ORAL ANTICOAGULANT MEDICATION

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Background and importance Oral anticoagulants are internationally recognised as high risk medications that can cause significant patient harm when used in error.¹ High patient adherence to oral anticoagulant treatment is essential to avoid thrombosis or stroke. The pharmacy department has prioritised the provision of medicines education to all inpatients newly started on an oral anticoagulant. Both verbal education and a warfarin or direct acting oral anticoagulant (DOAC) booklet are provided to all patients. A DOAC booklet was developed and introduced in 2017.

Aim and objectives To assess patient satisfaction with oral anticoagulant education provided by pharmacists and to obtain feedback on the new DOAC booklet.

Material and methods The study took place over a 6 week period (February to April 2018). All patients provided with pharmacist education on an oral anticoagulant were requested to complete a patient satisfaction survey after the education session. Patients had the option to decline participation in the study. The survey assessed if the patient found the information useful, the quantity of information discussed and the medium of communication considered most beneficial.

Results 30 patients were involved in this study. 40% (n=11) of patients were prescribed warfarin, with the remaining 56% (n=17) prescribed a DOAC (apixaban n=12, rivaroxaban n=4, dabigatran n=1). All patients reported that the verbal and written information was useful and that they were happy with the amount of information discussed. 97% of patients (n=29) reported that they understood the information discussed. When asked which format of communication was most beneficial, the majority (n=16) of respondents answered both verbal and written communication. All patients (n=16) who had read the DOAC booklet reported that it was helpful.

Conclusion and relevance The results of this study demonstrated patient satisfaction with pharmacist education on newly commenced oral anticoagulants. Most education sessions were for DOACs, reflecting the change in prescribing practices and the trend away from warfarin. The preferred medium of education varied between patients. The results suggested that pharmacists should continue to use both verbal and written education to account for patient preference and understanding. Patients reported that they found the new DOAC booklet helpful.

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4CPS-221 EFFECT OF SARS-COV-2 PANDEMIC ON DIRECT ORAL ANTICOAGULANT USE IN THE PRIMARY CARE SETTING

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Background and importance Direct oral anticoagulants (DOAC) were moderately used in the primary care (PC) setting due to their associated risks in elderly and their high cost. In contrast, acenocumarol was much more common in Catalonia, even though it requires intense monitoring. During the SARS-CoV-2 pandemic, the use of DOAC has been encouraged to reduce patient medical visits.

Aim and objectives To analyse the change in DOAC use in our area and to evaluate prescription appropriateness.

Material and methods This cross sectional study analysed the use of DOAC in a PC population in Barcelona in September 2020. The results were compared with historical data from December 2018. Demographic variables (age, gender), pharmacotherapeutic data (drugs, dose, frequency) and clinical data (glomerular filtration (GF), international normalised ratio (INR), CHA2DS2-VASc score) were obtained from the electronic medical record (September 2020). Prescription appropriateness was evaluated according to the drugs' summary of product characteristics.

Results The study included 351 732 patients in 2018 and 364 350 in 2020; 9194 (2.65%) and 10 017 (2.75%) of the patients were treated with oral anticoagulants (OA), respectively.

Prevalence of OA use:

- 2018: acenocumarol 5734 (62.4%), warfarin 133 (2.3%), apixaban 1006 (10.9%), edoxaban 309 (3.4%), dabigatran 532 (5.8%) and rivaroxaban 1480 (16.1%).
- 2020: acenocumarol 3804 (38.0%), warfarin 157 (1.6%), apixaban 1875 (18.7%), edoxaban 959 (9.6%), dabigatran 712 (7.1%) and rivaroxaban 2510 (25.1%).

Comparison of prevalence between 2018 and 2020:

- Decrease in acenocumarol (62.4% vs 38.0%, $p < 0.0001$).
- No change in warfarin (1.45% vs 1.6%, $p < 0.05$).
- Increase in DOAC (36.2% vs 60.5%, $p < 0.0001$), specifically: increase in edoxaban (9.3% vs 15.8%, $p < 0.0001$), no change in apixaban (30.2% vs 31.0%, $p < 0.05$) and decrease in dabigatran and rivaroxaban (16.0% vs 11.8% and 44.5% vs 41.5%, respectively, $p < 0.05$).

DOAC prescription appropriateness in 2020 (among 6056 patients):

- The main indication was atrial fibrillation (5881 patients, 97.1%).
- 373 men had CHA2DS2-VASc < 2 and 240 women had CHA2DS2-VASc < 3 .

- Frequency of contraindications: peptic ulcer (1603; 26.5%), valvulopathy (1060; 17.5%) and renal failure (76; 1.3%).
- 2433 (40.2%) patients had at least one contraindication.
- Dose was not appropriately reduced in 526 patients (8.7%).

Conclusion and relevance DOAC use increased notably in our PC area during the SARS-CoV-2 pandemic.

We found that 40.2% of patients treated with DOAC had at least one contraindication for the treatment. Interventions should be done to improve DOAC prescription and ensure patient safety.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-222 CONCORDANCE BETWEEN GUIDELINES ON PERIOPERATIVE MANAGEMENT OF NOVEL ORAL ANTICOAGULANTS AND ITS IMPLEMENTATION AND PREVENTABLE CAUSES OF THE OCCURRENCE OF ISCHAEMIC STROKE

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Background and importance Increasing numbers of patients receiving a novel oral anticoagulant (NOAC) are undergoing elective surgery. The extent to which perioperative interruption of NOAC therapy is concordant with best evidence is uncertain.

Aim and objectives This study investigated whether inappropriate perioperative advice can lead to the occurrence of an ischaemic stroke. Furthermore, we examined the relation between inappropriate dosing, perioperative management and interactions.

Material and methods Data from all ischaemic stroke patients, previously treated with a NOAC, were retrospectively collected from the EVAS-BE-database (January to October 2019). The following data were retrieved: date of stroke, aetiology, previous stroke, posology and indication for NOAC, renal function, weight, age, concomitant drugs, surgery (indication, date, bleeding risk, preoperative advice), medication management post-stroke and discharge therapy. Concordance of perioperative anticoagulation management with regional and EHRA guidelines was rated by a clinical pharmacist according to the explicit risk of thrombosis and bleeding.

Results Of the 57 patients with an ischaemic stroke receiving a NOAC, nine (16%) had been planned to undergo surgery. The decision to interrupt anticoagulation was concordant with regional guidelines. Compared with EHRA guidelines: three cases stopped without indication (5 days–2 days), and three low and one high bleeding risk patient stopped too early. None of them were bridged.

Firstly, inappropriate dosing (30%) and posology (7%) based on the SmPC criteria was identified. Of the 17 inappropriately dosed patients, underdosing was the main factor (16 vs 1). Secondly, 16 patients (28%) showed one or more interactions with concomitant drugs. Due to the pharmacodynamic interactions, a higher risk of thrombosis was seen in two patients. Four patients showed a pharmacokinetic interaction; one was a decreased effect. Thirdly, the greatest risk in the perioperative phase seemed to be post-surgery in comparison with

pre-surgery, seen in seven and two patients, respectively. Medication adherence was questionable in five patients (9%). **Conclusion and relevance** The occurrence of ischaemic stroke in the perioperative phase in patients treated with a NOAC was a major problem. The main issue seemed to be the discordance between our regional and EHRA guidelines regarding perioperative NOAC management. Apart from the perioperative transition phase, other reasons for occurrence were inappropriate dosing, drug interactions and non-compliance.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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4CPS-223 REAL WORLD EXPERIENCE OF SELEXIPAG FOR PULMONARY ARTERIAL HYPERTENSION

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Background and importance Pulmonary arterial hypertension (PAH) is a life-threatening disease causing an increment in pulmonary vascular resistance which leads to right ventricular failure and death. Selexipag is an oral selective IP prostacyclin receptor agonist, shown to be beneficial in the treatment of PAH, reducing morbidity and mortality in these patients. It was approved by AEMPS in 2015.

Aim and objectives The aim of this study was to evaluate medication adherence and the evolution of baseline characteristics, NT-proBNP, functional class (WHO-FC) and non-invasive studies, such as the 6 min walking test, after starting treatment with selexipag. The risk stratification before and after starting treatment with selexipag was also analysed.

Material and methods Since the inclusion of selexipag in our therapeutic guide in November 2017 up until April 2020, seven patients (85.7% women) have received the drug. Adherence was calculated based on dispensation records, and the other parameters of the study were monitored at every visit.

Results All patients had PAH, three of them associated with a congenital heart defect (two with Eisenmenger's syndrome due to an uncorrected heart defect and one with a corrected heart defect). All had been treated with phosphodiesterase-5 inhibitors (PDE5-I) and endothelin receptor antagonists (ERAs) before starting selexipag.

Two patients were in a low risk situation (switch from inhaled treprostinil to selexipag), four patients were in an intermediate risk situation and one patient was in a high risk situation, who after the titration phase was changed to epo-prostenol because of persistence of the high risk situation. After the titration phase, one patient in the intermediate risk group changed to a low risk situation.

We found that treatment with selexipag reduced the WHO-FC, the 6 min walking test, NT-proBNP and right heart failure symptoms. Regarding adherence, median medication adherence was 97%: five patients had 100% adherence to the treatment and the others showed 98% and 80% adherence. 50% of patients received a high dose of selexipag, and the most common side effects were diarrhoea and muscle pain.

Conclusion and relevance The use of selexipag in our clinical practice in patients with PAH improved risk parameters (functional class and the 6 min walking test) and right ventricle