were defined, including 49 patients who underwent 1-step surgery and 21 patients who underwent 2-step surgery. Difference between the two groups in mean TSH values and average time between operation and biological test were not statistically significant (p = 0.204 and 0.97, respectively). No statistically significant difference could be demonstrated between the mean POTg in the two groups (p = 0.622).

Conclusion and Relevance Mean POTg appears to be independent of the surgical procedure, which is an important consideration when deciding on postoperative treatment.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of Interest No conflict of interest.

4CPS-192 ASTHMA AND RISK OF CARDIOVASCULAR EVENTS: A RETROSPECTIVE STUDY

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Background and Importance Asthma is frequently associated with respiratory and non-respiratory comorbidities. Non-respiratory comorbid conditions include cardiovascular disease; indeed, asthma has been linked with increased risk of cardiovascular events, although its prevalence varies between studies and robust evidence of this relationship is limited.

Aim and Objectives The aim of this study was to identify and assess cardiovascular disease risk for asthma patients.

Material and Methods Retrospective cohort study involving patients followed-up by the severe asthma unit of a tertiary care hospital in Spain. Sociodemographic variables included sex and age. The clinical variables were comorbidities (obesity, BMI>30; type 2 diabetes; arterial hypertension; dyslipidaemia and other respiratory conditions), smoking status, asthma phenotype, biomarker concentrations (fractional exhaled nitric oxide [FeNO], total and specific serum IgE and blood eosinophil count [BEC]) and lung function. Treatment with biologics for asthma, systemic and inhaled corticosteroids, inhaled short-acting beta-agonists and antihypertensive medication were also recorded. Patients with a cardiovascular event prior diagnosis of asthma were excluded. History of cardiovascular events was obtained and odds ratios (ORs) for cardiovascular events in asthmatic patients were analysed using a multiple logistic regression model.

Results A total of 206 patients with asthma were included (65.6% female; mean ± SD age 57 ± 18 years). 121 patients had allergic asthma, 98 were obese, 24 had diabetes, 65 had hypertension, 52 had dyslipidaemia and 21 had obstructive sleep apnoea. 23 patients (11%) suffered a cardiovascular event. A higher risk of cardiovascular event was observed in those patients with hypertension (OR=2.717, p=0.026), dyslipidaemia (OR=2.717, p=0.026), and chronic obstructive pulmonary disease (COPD) (OR=5.358, p=0.003). A higher risk was also observed in patients with FEV1>80% prior biologic therapy (OR=3.316, p=0.013).

In contrast, a reduced risk of a cardiovascular event was observed in those patients who had inhaled corticosteroids (OR=0.187, p=0.007) or had a BEC>150 cells/μL (OR=0.225, p=0.025).

Conclusion and Relevance Risks of cardiovascular events were increased in asthma patients with hypertension, dyslipidaemia or COPD. A lower risk of cardiovascular events was observed in patients on inhaled corticosteroids and, unexpectedly, in those with FEV1<80% and BEC>150 cells/μL. Nonetheless, these results must be interpreted with caution as the design of the current study is subject to limitations.

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Conflict of Interest No conflict of interest.

4CPS-193 EFFECTIVENESS AND SAFETY OF INTRAVENOUS USTEKINUMAB INTENSIFICATION IN CROHN'S DISEASE WITH LOSS OF RESPONSE OR PARTIAL RESPONSE TO SUBCUTANEOUS THERAPY

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Background and Importance Ustekinumab is approved for adult patients with moderately-severe active Crohn's disease (CD) at a usual dosing schedule of 90 mg every 8 to 12 weeks subcutaneously. Some patients may experience a partial response or secondary loss of response. There is increasing evidence for patient rescue by shortening the subcutaneous administration interval, but very little evidence for intravenous intensification.

Aim and Objectives To evaluate the effectiveness and safety of treatment intensification with intravenous ustekinumab in adults with CD and loss of response to the standard subcutaneous regimen.

Material and Methods Single-centre, descriptive, retrospective study including CD patients who intensified ustekinumab treatment to receive 130 mg intravenously every 4–6 weeks from January 2020 to August 2022.

The clinical remission rate (defined as a Harvey-Bradshaw index (HBI) <5) at 12, 24 and 52 weeks and the early clinical response rate (defined as a reduction in HBI by ≥3 points or by a 30% from baseline) at 12 weeks were analysed. The evolution of inflammatory laboratory parameters such as C-reactive protein (CRP) and faecal calprotectin (FC) was assessed. Adverse effects developed during the follow-up period were collected.

Results Forty-one patients were included; 61.0% were male, with a median age at intensification of 44.9 years (interquartile range (IQR): 37.8–59.6), a median disease progression of 16.6 years (IQR: 8.1–22.3) and a median time to intensification from ustekinumab initiation of 19.6 months (IQR: 10.8–31.3). The most frequent phenotypes were L3 (53.7%) and B2 (43.9%). Perianal involvement was present in 46.3% of patients.

Of the total, 31 (75.6%) patients had a baseline HBI ≥5, of whom 18 (58.1%) achieved early clinical response. Clinical remission was achieved by 39.0% of patients at 12 weeks and by 58.5% at 52 weeks. The persistence rate at 52 weeks was 90.2%. Median laboratory parameter values improved at each time cut-off from baseline.

No serious adverse effects were reported and no patient discontinued treatment due to adverse effects. One episode of urinary tract infection and one episode of nasopharyngitis were documented.

Conclusion and Relevance Intravenous ustekinumab at 130 mg every 4–6 weeks improves CD inflammatory activity in patients with loss of response or partial response to the standard subcutaneous regimen.

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4CPS-194 EVOLUTION OF HOSPITAL CLINICAL PHARMACY SERVICES IN FINLAND DURING YEARS 2017–2022: A FOLLOW-UP SURVEY

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Background and Importance Pharmacists' involvement in patient care became more common along with system-based medication safety work in Finnish hospitals during 2011–2016. The first national survey was conducted in 2011 and repeated using the same method in 2016. This development is in line with national and international patient safety policy initiatives and European hospital pharmacy statements.

Aim and Objectives The aim of this study was to conduct the third national follow-up survey on hospital clinical pharmacy services in Finland in 2022 and compare the results to the year 2016.

Material and Methods The study was conducted in 2022 as a national online survey targeted to hospital pharmacies (n=22) and medical dispensaries (n=23). The questions were analysed using descriptive statistics and qualitative content analysis.

Results The response rate of the survey was 62% (n=29/45). Clinical pharmacy services were provided in 83% (n=24/29) of the responding units. The number of clinical pharmacy staff increased between 2017 and 2022, and services were provided in more versatile environments. In particular, the services had become more common at admission and in outpatient units, such as first aid, emergency rooms, and outpatient clinics where medication reconciliation is essential. Furthermore, in some units (25%, n=6/24), services were also available in the evenings and during weekends in one responding unit. As in 2016, the system-based medication safety work and the comprehensive development of the medication management system were highlighted also in this survey. The most increased tasks were medication reviews and medication safety audits, whereas in 2016 the most increased task was medication reconciliation. Surprisingly, pharmacists' participation in the patient's discharge had decreased. Despite the increasing prevalence of automation technology and pharmacy assistants, logistic tasks had remained on the same level as in 2016.

Conclusion and Relevance Finnish hospital clinical pharmacy services have expanded in line with national and international guidelines and increasingly concentrate on promoting medication safety. The focus is currently on admission and outpatient units. In the future, more effort should be put into discharge, because it would be particularly cost-effective by decreasing drug-related readmissions.

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4CPS-195 CHARACTERISATION OF INJECTABLE FORMULATIONS AND OPTIMISATION OF THEIR DELIVERY BY ENTERAL TUBE: A PHYSICOCHEMICAL AND PHYSIOLOGICAL APPROACH

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Background and Importance Oral administration of injectables is an alternative for patients with difficulties tolerating solid pharmaceutical forms.

Due to their physicochemical characteristics not adapted to oral administration, gastrointestinal adverse effects can occur, especially in patients with transpyloric feeding tube, especially when they have an osmolarity >500 mOsm/L or pH <3.5.

Aim and Objectives The aim of the present work is to characterise the physicochemical properties of injectable formulations commonly used orally and their gastrointestinal absorption site in order to increase safety in their administration by transpyloric feeding tube.

Material and Methods A literature search was conducted to establish the gastrointestinal absorption site of the active principles (AP) analysed.

For each preparation, pH and osmolality were experimentally determined. The pH was measured with a pH meter (Crison 2006, Hach Lange España, S.L.U., Spain). Osmolarity was determined using the Fiske Model 210 Micro Osmometer (John Morris Scientific Pty Ltd., Australia), considering the density of the active principles studied to be equal to 1 mg/ml. All measurements were performed in triplicate.

Results Of the 24 APs analysed, pH values<3.5 were found in 21% of preparations, which discourages transyejunal administration. In addition, 25% of the formulas administered had osmolarity >500 mOsm/L.

- Of the 13 APs that have bioavailability by transpyloric route, only eight are adequately formulated for this, and another three could be diluted prior to administration to avoid high osmolarities.
- Of the five APs that cannot be administered via the transpyloric route, three of them are also not adequately formulated.
- Of the remaining six APs, whose absorption site cannot be objectified, three have good physicochemical characteristics and with another two this could be achieved by diluting with water.

Conclusion and Relevance Most of APs studied, the gastrointestinal absorption of the drug is not sufficiently characterised,