

pharmacists in Spain. There is a high level of knowledge about MDIs carbon footprint, and the attitude towards the issue is positive, but environmental criteria are not considered to develop hospital formularies.

## REFERENCES AND/OR ACKNOWLEDGEMENTS

**Conflict of Interest** No conflict of interest.

### 6ER-023 A MULTI-SECTOR SIMULATED EXPERIENTIAL PRACTICE EVENT FOR YEAR 1 PHARMACY STUDENTS

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**Background and Importance** Simulation-based education complements traditional teaching, improving students' knowledge, understanding, as well as supporting the development of students' teamwork, decision-making, and consultation skills<sup>1,2</sup>, as well as supporting professional identity formation<sup>3</sup>. Year 1 students across the country participated in a pre-placement workshop and a simulated multi-sector experiential event.

**Aim and Objectives** To evaluate Year 1 pharmacy students' and participating staff' experiences of a simulated multi-sector Experiential Event designed to develop clinical and consultation skills.

**Material and Methods** The year 1 Experiential Event was delivered in both Universities in the country in March 2022. Staff (n=16) and students (n=222) were invited to complete a post-Event evaluation on Microsoft Forms to inform ongoing improvement of the Event.

Ethical approval was not required as this formed part of the review of the module

**Results** Seventy-five percent of staff responded (n=12) with 42% (n=5) respondents believing that students were competent conducting medication history, counselling and simple prescribing decisions. Seventy-seven percent of students (171/222) responded; 85% (n=145) and 81% (n=139) respectively believed that the medication history and consultation checklists developed in the pre-placement workshop prepared them for 'real' patient consultations. Students were confident in conducting BP and peak flow examinations (73%, n=125) and in prescribing medication (83%, n=142). Eighty-six percent (n=147) of respondents believed that the event had made them feel more like a pharmacist.

**Conclusion and Relevance** Year 1 respondents showed an appreciation for the experiential event, believing that it improved their clinical and consultation skills. The majority of student respondents believed that the event supported their professional identity formation. Staff respondents agreed that students developed core clinical skills but to a lesser extent than student participants, believing curriculum redesign will facilitate enhanced student engagement with the event.

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### 6ER-024 LYELL'S SYNDROME IN CAR-T TREATED PATIENTS: A CASE STUDY

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**Background and Importance** Lyell's syndrome - a toxic epidermal necrolysis - is a rare and potentially life-threatening disease that affects the skin and mucous membranes. The drugs commonly implicated in toxic epidermal necrolysis (TEN) include non-steroidal anti-inflammatory drugs, chemotherapy, antibiotics and anticonvulsants.

**Aim and Objectives** This case report explores potential triggers of Lyell's syndrome in 39-year-old woman diagnosed with relapse and diffuse refractory large cell B lymphoma (DLBCL) who underwent Third Line Therapy with Axicabtageneclolucel. After the infusion, CRS (cytokine release syndrome) was reported, which progressed from grade 1 to G2 within 3 days. This was complicated by the onset of ICANS (immune-effector cell-associated neurotoxicity syndrome) progressed to G3 within 3 days. Subsequently, the HLH/MAS framework (Hemophagocytic Lymphohistiocytosis/Macrophage Activation Syndrome) was reported. To control her persistent high fever and to reduce the risk of convulsions, was somministrated levetiracetam. Despite anti-cytokine therapies and steroids were continued, after 6 days Toxic epidermolysis affected 90% of the body surface area, confirmed by histological examination of the skin rhomboid, consistent with TEN/Lyell syndrome. Levetiracetam was discontinued.

**Material and Methods** Medical records and National Pharmacovigilance Network were used to collect data.

**Results** The patient was admitted to the intensive care unit for 32 days, receiving treatments comparable to those given to patients with severe burns. Drugs administered: ruxolitinib, methylprednisolone, daptomycin, amine, piperacillin/tazobactam, tocilizumab, entanercept, anakinra, and high-dose fluids. The pharmacist provided critical support to CAR-T team, playing a key role in the management of drug selection and occasionally resort to off-label use of medicines. A sterile paraffin tulle gras dressing led to re-epithelialisation and disappearance of the blisters. DLBCL progression led to death 9 months later.

**Conclusion and Relevance** The co-administration of several drugs, the lack of available data on adverse drug reactions (ADRs) in response to CAR-T, and the temporal relationship between levetiracetam and onset of ADR lead to the conclusion that a metabolite of anticonvulsants, identified in the literature as a potential trigger, was responsible for the ADR. The decision to use anti-TNF-alpha was critical in the management of the syndrome. A comparable ADR was subsequently reported in Eudravigilance, raising uncertainty about the potential involvement of levetiracetam as a trigger of the ADR.

## REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of Interest No conflict of interest.

6ER-025

### ANTIMICROBIAL ACTIVITY OF SUBCRITICAL CO<sub>2</sub> EXTRACT OBTAINED FROM UNDERGROUND FERULA ASAFOETIDA L

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**Background and Importance** Literature review showed that various extracts of *Ferula asafoetida* L. have wound healing, anti-inflammatory, antinociceptive, antimicrobial, antitumour, anti-diabetic effects. However, there is a lack of studies regarding CO<sub>2</sub> extracts of *Ferula asafoetida* L. This raises the need for phytochemical and antimicrobial study of this extract.

**Aim and Objectives** The possibility of creating to consider an antimicrobial preparation based on CO<sub>2</sub> extract of *Ferula asafoetida* L. used in pharmacy practice.

**Material and Methods** Determination of the constituents of the CO<sub>2</sub> extract of *Ferula asafoetida* L. was done by GC-MS and identified by comparing the obtained spectra with the existing NIST library.

**Results** GC-MS analysis of the CO<sub>2</sub> extract of *Ferula asafoetida* L. showed that some components of sulfur compounds (34.69%) were in rather high concentrations. In the course of the studies, the minimum inhibitory concentrations (MIC) of the CO<sub>2</sub> extract of *Ferula asafoetida* L. were determined by the method of serial dilutions in liquid nutrient medium: *Staphylococcus aureus* 7.81 µg/ml, *Bacillus subtilis* 31.25 µg/ml, *Escherichia coli*, *Klebsiella pneumoniae*, *Salmonella enterica* 15.63 µg/ml, *Candida albicans*, *Aspergillus niger* 62.5 µg/ml. In the second method, the CO<sub>2</sub> extract of *Ferula asafoetida* L. is more active than the comparison drug amoxicillin against *Staphylococcus aureus* and spore bacterium *Bacillus subtilis* by 1.2-fold, *Escherichia coli* by 1.5-fold and *Salmonella enterica* by 1.4-fold. And also this extract showed fungicidal activity against *Candida albicans* 1.5 times more than fluconazole.

**Conclusion and Relevance** The wide range of antimicrobial properties of the CO<sub>2</sub> extract of *Ferula asafoetida* L. is associated with the presence of sulfur compounds in its chemical composition. As a result of comparing the antimicrobial activity of this extract with literature data, we found that the antimicrobial activity of CO<sub>2</sub>-extract of *Ferula asafoetida* L. is higher than that of polar extracts of this plant, and that of essential oils it is higher against *Escherichia coli* and *Bacillus subtilis*. In view of the above, the CO<sub>2</sub>-extract of *Ferula asafoetida* L. can be used in pharmaceutical practice as a medicinal herbal remedy with antimicrobial action.

## REFERENCES AND/OR ACKNOWLEDGEMENTS

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6ER-026

### THE IMPORTANCE OF PHARMACY DEPARTMENT CLINICAL TRIALS UNIT INTERVENTION IN A REFERENCE CENTRE FOR THE TREATMENT OF PARAMYLOIDOSIS

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**Background and Importance** As a reference centre for the treatment of familial paramyloidosis, our hospital receives patients from all over the country.<sup>1</sup> The emergence of new therapeutic options is essential to ensure treatment and reduce the impact that the disease has on individuals and families.

Clinical Trials (CT) using new molecules such as tafamidis, inotersen and patisiran represent significant advances in the treatment of patients with Hereditary Transthyretin Amyloidosis (hATTR), instead of liver transplant.<sup>2</sup>

**Aim and Objectives** Describing the activity of the Pharmacy Department Clinical Trials Unit (PDCTU) in a reference centre for the investigation and treatment of hATTR, between 2006 and 2023.

**Material and Methods** Retrospective analysis of the participation of the PDCTU of our hospital in the clinical investigation of hATTR. For this analysis, the number of CT started each year, the number of ongoing CT and the number of patients included in CT associated with hATTR were evaluated.

**Results** Since 2006, our PDCTU has participated in 21 CT. It has made a significant contribution to the approval of emerging therapies, some of which have already been granted Marketing Authorisation, as is the case of transthyretin (TTR) stabilisers and TTR level reducing agents.

In total, since 2006, 327 patients have taken part in hATTR-related CT, 64 of whom are still taking part in a set of 6 CT, all of them of phase 3.

Each trial associated with hATTR had an average participation of eight patients, an average well above the average of patients/trial (two patients/trial) at our centre.

**Conclusion and Relevance** Since 2015 there has been a growing trend in the inclusion of hospital in new CT. The centre is evaluating various investigational therapies for the treatment of hATTR, including agents that stabilise TTR, antibodies, antisense oligonucleotides and RNAi therapies.

The pharmacists at the PDCTU, contribute to the development and approval of new therapeutics, guidelines and protocols. Since they are responsible for the entire investigational product circuit, they ensure that trials are well conducted.

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