Background and importance Mucopolysaccharidosis VII (MPSVII), also known as Sly syndrome, is an ultra-rare disease characterised by deficiency of β-glucuronidase. Sly phenotypes vary from severe forms with hydrops fetalis and skeletal dysplasia, hepatosplenomegaly, heart valve abnormalities and mental retardation, to milder forms with fewer manifestations.

Aim and objectives To compare the vancomycin pharmacokinetic (PK) profile observed in a newborn with MPSVII with that expected in an average neonate.

Material and methods Clinical data were collected from the electronic medical record (Diraya), and an extensive literature research was made using different electronic databases (Pubmed, Scopus). Serum concentration-time profiles were adjusted to a one compartment neonatal population PK model incorporating body weight and renal function as the significant covariates, using the Abottbase PK System (PKS) programme.

Results The patient was a 26-day-old male, with a postmenstrual age of 38 weeks, and diagnosed with MPS VII, who initially had phlebitis and fever during his stay in the neonatal intensive care unit. His blood cultures were positive for coagulase negative Staphylococcus aureus. The patient was treated with vancomycin 10 mg/kg/8 hours intravenously. PK were evaluated before the sixth dose, with weight of 2.2 kg, height 44 cm and a creatinine serum level of 0.92 mg/L. After obtaining a serum level of 123.6 μg/mL (normal trough range 10–15 μg/mL), vancomycin was stopped. After 2 days, serum levels were 11.4 μg/mL, so vancomycin was restarted at 10 mg/kg/12 hours. After four administrations, serum levels were again out of range (48.2 μg/mL), and the antimicrobial was switched to claxocillin. Based on the vancomycin levels, we estimated a half-life of 15.8 hours, instead of the 4–8 hours described. The distribution volume calculated was 1.99 L with a clearance of 0.088 L/hour. The expected distribution volume was 1.8 L and a clearance of 0.148 L/hour.

Unfortunately, the baby passed away 3 days later due to other complications.

Conclusion and relevance A 2–3 times greater half-life was observed in this patient with Sly syndrome. The large accumulation of vancomycin was not described in the literature and was not expected with the features of this disease, highlighting the importance of therapeutic drug monitoring in patients with ultra-rare diseases whose pharmacokinetics could be disturbed by factors still unknown.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest
(cSSSI), and community acquired pneumonia (CAP). However, the most specific aspect of the drug is that it is a beta-lactam with activity against methicillin resistant *Staphylococcus aureus* (MRSA). These characteristics mean that a large part of its use in clinical practice is in off-label indications.

**Aim and objectives** To determine the use of ceftaroline in the clinical practice of a third level hospital, and its effectiveness and safety.

**Material and methods** An observational retrospective study was conducted that included all patients treated with ceftaroline in the hospital from May 2016 to September 2020. Variables studied were: age, sex, indication, dose, microorganism, clinical and microbiological cure, and adverse effects.

**Results** 57 patients received treatment with ceftaroline, 75.4% men, with a median age of 69 years (28–89). In 11/57 patients it was used as empirical treatment (for suspected multi-resistant germ) and in 46/57 as directed treatment, for the following indications: 13 bacteraemia, 14 endocarditis (with bacteriaemia), 15 pneumonia (11 with bacteriaemia, 1 with CNS infection and 2 with cSSSI), 2 cSSSI and 2 CNS infections. Infections were caused by MRSA in 23/46 patients, 15/46 by methicillin resistant coagulase negative *Staphylococcus*, 5/46 methicillin sensitive *Staphylococcus aureus* (MSAS), 2/46 *Streptococcus pneumoniae* and in 1 patient due to MSAS and *Streptococcus pneumoniae*. Methicillin resistant microorganisms caused the infections in 38/46 patients. The median duration of treatment was 7 days (1–42). Posology: 600 mg/8 hours was used in bacteriaemia, endocarditis and in CNS infection, and 600 mg/12 hours in cSSSI. The regimen used in pneumonia was 600 mg/12 hours in 6/15 patients and 600 mg/8 hours in 9/15 patients (8 of whom had bacteriaemia and one had concomitant CNS infection). The dosage used in the empirical treatment was 600 mg/12 hours in eight patients and 600 mg/8 hours in three. In six patients it was adjusted for renal function. 78.7% of the patients presented with clinical resolution (82.9% microbiological). Thrombopenia was detected in two patients, probably associated with treatment with the drug.

**Conclusion and relevance** Our results suggested that ceftaroline was effective in severe cases of methicillin resistant gram positive infections. In most cases, ceftaroline was used for off-label indications. In these cases, higher dosages are being recommended, which are usually prolonged in time, so it is advisable to evaluate the profile of adverse effects.

**REFERENCES AND/OR ACKNOWLEDGEMENTS**

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HEPATITIS C RETREATMENT OF A PATIENT WHO FAILED MULTIPLE TREATMENTS INCLUDING PROTEASE INHIBITOR AND NON-STRUCTURAL PROTEIN 5A INHIBITORS: A CASE REPORT

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**Background and importance** It is well documented that direct acting antiviral (DAA) combinations in the treatment of hepatitis C virus (HCV) achieve high rates of sustained virologic response. However, studies on retreatment options for patients who have failed several DAA treatment regimens that include non-structural protein 5A (NS5A) inhibitors remain scarce.

**Aim and objectives** To assess the efficacy of glecaprevir/pibrentasvir plus sofosbuvir and ribavirin for 12 weeks in genotype 1b patient with compensated cirrhosis who had virologic failure to multiple treatments including regimens containing NS5A inhibitors.

**Material and methods** A 50-year-old man failed multiple hepatitis C treatments, including peginterferon plus ribavirin (2003) for 9 months, sofosbuvir/ledipasvir plus ribavirin (2014) for 24 weeks, sofosbuvir/simeprevir plus ribavirin (2015) for 24 weeks and sofosbuvir/velpatasvir plus ribavirin (2018) for 24 weeks. Adherence to these treatments was correct according to the dispensing records. Headache, fatigue, anaemia, nausea and pruritus were reported with oral treatments, but drug withdrawal was not required. However, peginterferon was stopped due to anxiety and depression.

There are no specific algorithms to guide retreatment decisions. These must be guided by the drugs administered in previous treatment courses or, if resistance testing is performed, by probabilities of response according to the resistance profile and the treating team’s experience. Resistance testing showed resistance to NS5A inhibitors: daclatasvir, elvansvir,ledipasvir, omibitasvir and velpatasvir, but not to pibrentasvir. The multidisciplinary team decided on a new treatment with glecaprevir/pibrentasvir plus sofosbuvir and ribavirin for 12 weeks and it was started in November 2019. Prior to treatment, drug interactions were checked. An undetectable HCV RNA level 12 weeks after completion of therapy (SVR12) defined treatment success.

**Results** Two potential drug interactions were detected: (1) gemfibrozil was discontinued because of the increased risk of gastrointestinal side effects; (2) due to the potential increase in carvedilol concentrations, close monitoring of heart rate and blood pressure was recommended. The patient achieved SVR12 with the fifth hepatitis C treatment with glecaprevir/pibrentasvir plus sofosbuvir and ribavirin for 12 weeks.

**Conclusion and relevance** In this particularly difficult to cure cirrhotic patient previously exposed to NS5A inhibitors, the combination of glecaprevir/pibrentasvir plus sofosbuvir and ribavirin administered for 12 weeks achieved SVR12.

**REFERENCES AND/OR ACKNOWLEDGEMENTS**

Conflict of interest No conflict of interest