the chest X-ray at day 3 was observed in 7 of the 9 patients, and no radiological worsening was recorded in the 2 other patients. Median SpO_2 at baseline was 92% (IQR 88–95), with a significant improvement of 97% (IQR 96–98) (p=0.007) at day 3. Significant differences were also observed in various laboratory parameters between days 0 and 3. No serious adverse events were observed. On days 3 and 14, no patient had died and none required invasive ventilation. One patient died after 21 days of hospitalisation; the remaining 8 were discharged (length of stay 6–45 days).

Conclusion and relevance In this study of patients with refractory moderate–severe COVID-19, a 3 day course of low dose subcutaneous anakinra was effective and safe, resulting in radiological, clinical and analytical improvement in most cases. These observations require further evaluation in clinical trials.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-315 EVALUATION OF THE EFFECTIVENESS OF EARLY ADMINISTRATION OF TOCILIZUMAB IN PATIENTS WITH COVID-19

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Background and importance From the beginning of the COVID-19 pandemic, tocilizumab has been positioned as an effective drug to treat cytokine release syndrome, which causes acute respiratory distress in patients with SARS-CoV2 pneumonia. Throughout these months, clinical protocols have been developed that improve the effectiveness, introducing it at the onset of symptoms.

Aim and objectives To evaluate if the change in criteria for treatment with tocilizumab between the first and second waves of the COVID-19 pandemic, introducing it at the onset of symptoms, led to an improvement in its effectiveness.

Material and methods A retrospective observational study was conducted between 3 March 2020 and 15 October 2020 in patients with COVID-19 confirmed by PCR, treated with tocilizumab in a first level hospital. Demographic, clinical and pharmacotherapeutic data were collected from electronic medical records. To compare the effectiveness of treatment between the first COVID-19 wave (3 March to 31 May 2020) and the second COVID-19 wave (31 May to 15 October), we collected for each patient: days from admission to tocilizumab administration, oxygen therapy requirement, ICU stay, hospital stay and survival. Differences between quantitative and qualitative variables were analysed, applying the Student's t test and the χ^2 test ($p \leq 0.005$). Statistical analysis was performed with SPSS22.0.

Results 167 patients (131 men), average age 58.9±12.6 years, were included. During the first wave, tocilizumab was administered to 100 patients. Days (average) until administration was 5±4.4. Length of hospital stay was 22.9±15.9 days. 39.0% of patients needed a stay in the ICU. Distribution of patients according to requirement for oxygen therapy: 48% high flow (HF) oxygen delivery systems, 19% low flow (LF) oxygen delivery systems and 31% with invasive mechanical ventilation. Two patients did not require oxygen therapy. The mortality rate was 28%. During the second wave, tocilizumab was administered to 67. Days (average) until administration was 2 ±2.2. Length (average) of hospital admission was 13.1±10.4 days. 10.1% of patients needed a stay in the ICU. Distribution of patients according to requirement for oxygen therapy: 11.6% HF and 88.4% LF. The mortality rate was 11.6%. We found statistically significant differences in length of hospital stay and mortality rate between the two groups.

Conclusion and relevance The study showed that early administration of tocilizumab increased survival, decreased ICU income and shortened hospital stay. A limitation of our study was the lack of comparison between inflammatory parameters before and after administration. Further studies are needed.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-316 MULTIPLE SCLEROSIS OUTPATIENT PHARMACEUTICAL CARE BY AN IMPLANTED TELEPHARMACY TOOL DURING SARS-COV-2 PANDEMIC

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Background and importance The SARS-CoV-2 pandemic has highlighted the need to avoid exposure of patients to places with a high probability of transmission, such as hospitals. Home delivery makes this possible, particularly in patients with disabilities and those especially vulnerable to coronavirus infection due to their drug therapy or previous pathology, such as multiple sclerosis (MS)

Aim and objectives To describe the telepharmacy system implanted in a teaching hospital for MS outpatients, based on telephone consultations and home delivery medication, from 25 March to 30 September.

Material and methods A logistic system was organised and implemented to ship medication to patient's residence, after a telephone pharmaceutical care interview. The following data were recorded: total home deliveries made by the outpatients pharmacy department (OPD), total patients attended by this system, total home deliveries made by OPD for MS patients and total MS patients attended by telepharmacy. All deliveries for MS patients requiring refrigeration conditions were also registered.

Results From 25 March to 30 September 2020, we performed 2166 home deliveries of 10 different MS medicines (24.0% of the total telepharmacy shipments made by OPD during this period). Up to 772 MS patients benefited from the telepharmacy system (75.0% of the total MS patients attended by our OPD). Almost 20% of these shipments required refrigeration. At the beginning, when lockdown was imposed in Spain, shipments for MS outpatients accounted for 23.2% of the total. Afterwards, with concrete conditions to maintain this system (reduced mobility, elderly, pluripathology), the percentage of MS patients attended by telepharmacy and also home delivery increased to 32.6% of the total.

Conclusion and relevance The development of telepharmacy has become a useful and necessary tool for the delivery of specialised pharmaceutical care, especially during the pandemic where patients with certain medical conditions, such as MS, were at risk. This made it possible to guarantee continuity of care for a large number of MS patients, avoiding hospital

visits, and therefore reducing SARS-CoV-2 transmissions. Otherwise, to maintain the sustainability of the implanted telepharmacy system, using the resources efficiently, it is necessary to apply patient stratifications tools, which allows access to this service to those patients who need it the most.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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4CPS-317 IMMUNOSUPPRESSIVE TREATMENT MANAGEMENT IN A COHORT OF HOSPITALISED SOLID ORGAN RECIPIENTS AFFECTED BY COVID-19

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Background and importance Management of immunosuppression in recipients of solid organ transplantation (SOT) is challenging. Drugs used in COVID-19 involve drug–drug interactions (DDIs) with immunosuppressants.
Aim and objectives To describe DDIs in hospitalised SOT recipients (SOTr) and to analyse DDI management and their clinical impact.
Material and methods A retrospective single centre study was conducted in SOTr with COVID-19 hospitalised from 11 March to 25 April. Clinical data and pharmacotherapy were recorded from admission up to 28 days or discharge. Lexicomp was used to detect and categorise DDIs according to: risk level (X: avoid combination; D: consider therapy modification; C: monitor therapy; B: no action needed), reliability rating and severity. 46 patients were included: 33 (71.7%) men, aged 62.7 ±12.6 (mean±SD) years. They had received kidney (30; 56.2%), lung (13; 28.3%) or liver (3; 6.5%) transplants.
Results Immunosuppression at admission: tacrolimus (41; 89.1%), mycophenolate mofetil/mycophenolate sodium (28; 60.9%), prednisone (39; 84.8%), everolimus (7; 15.2%), sirolimus (7; 15.2%) and cyclosporine (1; 2.2%). 106 DDIs affecting 42 (91.3%) patients were detected (patients could have >1 DDI). DDIs were classified as confirmed (18; 39.1%) or potential (33; 71.7%). Immunosuppressants with DDIs: tacrolimus (65; 61.3%), everolimus (12; 11.3%), sirolimus (6; 5.7%), methylprednisolone (12; 11.3%), prednisone (10; 9.4%) and mycophenolate (1; 0.9%).

Drugs for COVID-19 with DDIs: lopinavir/ritonavir (45; 42.5%), azithromycin (32; 30.2%), tocilizumab (15; 14.2%), darunavir/cobicistat (10; 9.4%), and hydroxychloroquine (4; 3.8%). DDIs were risk X (6; 5.6%), risk D (42; 40.8%), risk C (57; 53.7%) and risk B (1; 0.9%). The reliability rate of DDIs was excellent (0.9%), good (52.8%) and fair (44.3%). Severity was low, moderate and major in 6.6%, 84.9% and 8.5% of cases, respectively.

Immunosuppression was withheld in 33 (71.7%) patients due to DDIs. 36 (87.7%) of 41 patients receiving tacrolimus had 65 DDIs; tacrolimus was withdrawn in 22 (61.1%), reduced in 18 (50%) and increased in 4 (11.1%) cases. Seven patients receiving everolimus had 12 DDIs and 4 patients with sirolimus had 6 DDIs; immunosuppressant was stopped in all cases. Tacrolimus levels were supratherapeutic (>10 ng/mL) in 8 (25%) patients at admission, 13 (43.3%; n=30) at 48 hours, 10 (31.3%, n=32) at 7 days and 2 at 14 days (17.7%, n=28). No graft rejection was detected. Mean creatinine serum concentration was 2.2 mg/dL at admission and 2.6 mg/dL 7 days later. Two cases of acute kidney failure were attributable to tacrolimus intoxication.
Conclusion and relevance DDIs were highly prevalent in hospitalised SOTr with COVID-19. Pharmaceutical care is critical to promptly detect and manage DDIs in SOTr.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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4CPS-318 COMPOUNDING TACROLIMUS OPHTHALMIC OINTMENT 0.02% IN THE TREATMENT OF INFLAMMATORY AND AUTOIMMUNE OPHTHALMIC SYNDROMES: EFFECTIVENESS AND SAFETY ASSESSMENT

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Background and importance Inflammatory/autoimmune ophthalmic syndromes (IAOS) are often treated with corticosteroids in severe cases. However, in some cases, corticosteroids can be contraindicated, poorly tolerated or ineffective. This situation is common in paediatric patients who have a worse risk–benefit balance. Currently, evidence about using ophthalmic tacrolimus in IAOS is based in studies with monitoring duration reaching at most 4 weeks.
Aim and objectives To assess the effectiveness, tolerance and safety of compounded tacrolimus ophthalmic ointment 0.02% (CTOO) in the treatment of IAOS in paediatric and adult patients.
Material and methods We conducted observational retrospective research in paediatric and adult patients, recruited in our hospital with IAOS. Patients started treatment with CTOO once–twice/day+adjuvant therapy (AT) in January 2016 to April 2020, for 1 year at least. Effectiveness was assessed with hyperaemia grade (none, mild, moderate, severe) at 3, 6, 12 months, and grade of change noticed (GCN) at 1 and 12 months as a patient reported outcome. Tolerance/safety was determined at 1 week and 1 year. Every discontinuation was notified.
Results 30 patients (54 sick eyes) were recruited (27 women and 27 men). 32/54 were paediatric patients. The most common syndromes were vernal keratoconjunctivitis (18 eyes; 33.3%); atopic keratoconjunctivitis (14 eyes; 25.9%) and allergic conjunctivitis (8 eyes; 14.8%).

Hyperaemia was moderate–severe in 28 eyes (51.8%). It was reduced to 22.2% at 3 months, and to 9.3% at 12 months. No hyperaemia on day 0 was found in 21 eyes (38.9%) and which increased to 30 eyes (55.6%) at 3 months and to 41 (75.9%) at 12 months. After 1 month, 15 eyes (27.7%) had recovery of big or cleared grade, in 32 eyes (59.2%) recovery was mild–moderate and in 7 eyes (13.0%) no improvement was noticed. After a year, 15 eyes (27.7%) had reached the cleared grade. In contrast, 4 eyes had a deterioration after the treatment. Tolerance in the first week was: good (23 eyes; 42.6%), moderate (25 eyes; 46.3%) and poor in 6 eyes (11.1%) with no discontinuations. Tolerance at 1 year was good in 40 eyes (74.1%). However, in two eyes herpes virus infection was reported.