psoriasis. Median age was 50.7 years (range 5.9–91.7) and 221 (61.9%) patients were men. 282 patients (79%) were treated with only one biological drug: 75 patients with anti-TNF-α, 132 with anti-IL-17 and 75 with anti-IL-23. 65 patients (18.2%) were treated with two biological drugs in sequence (Table 1).

**Conclusion and relevance** More than 97% of patients were treated with only one (79%) or two (18.2%) biological drugs for moderate-to-severe plaque psoriasis, with a prevalence of anti-IL-17. Further investigation of the causes for the change from one to another biological drug is needed. These could include adverse events, ineffectiveness or other reasons.

**REFERENCES AND/OR ACKNOWLEDGEMENTS**

Conflict of interest No conflict of interest

---

**4CPS-330**

**INDIVIDUALISING THERAPIES THROUGH PHARMACOKINETICS: ADALIMUMAB FOR INFLAMMATORY BOWEL DISEASE**

D Rubio Calvo, M Herrera Exposito, JE Martinez De La Plata, CM Pinto Nieto*, MA Castro Vida, Agencia Publica Empresarial Hospital De Poniente, Pharmacy Department, El Ejido, Almería, Spain

Background and importance Biologic drugs are essential in the treatment of inflammatory bowel diseases (IBD) but it is necessary to individualise these therapies for optimal disease control. Pharmacokinetics have been shown to be useful for this aim.

Aim and objectives To analyse the clinical impact of adalimumab adjustment through pharmacokinetics and clinical parameters in IBD control.

Material and methods A longitudinal prospective study was conducted in a second level hospital in 2019, from June to December in patients with IBD treated with adalimumab that passed the induction phase. Data collected were sex, age and analytic parameters before and after treatment adjustment: plasma adalimumab levels and anti-adalimumab antibodies (ADAs) and previous adalimumab administration. Acute phase reactants (APR) were measured: C reactive protein (CRP), α-acid-glycoprotein (AGP) and faecal calprotectin. Overall patient status was obtained from the digital physician report; this parameter was reported as symptomatic or asymptomatic. We did one intervention per patient.

Interventions proposed were: treatment intensification (increasing dose and/or decreasing administration time), treatment deintensification (increasing administration time), drug...
Abstract 4CPS-330 Table 1

<table>
<thead>
<tr>
<th>Analytic parameter</th>
<th>Mean±SD</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adalimumab before (µg/mL)</td>
<td>11.52 (±6.46)</td>
<td>0.009*</td>
</tr>
<tr>
<td>Adalimumab after (µg/mL)</td>
<td>8.98 (±1.83)</td>
<td>0.434</td>
</tr>
<tr>
<td>ADAs before (µg/mL)</td>
<td>0.11 (±0.05)</td>
<td>0.012</td>
</tr>
<tr>
<td>ADAs after (µg/mL)</td>
<td>0.12 (±0.08)</td>
<td>0.129</td>
</tr>
<tr>
<td>CPR before (mg/dL)</td>
<td>0.52 (±0.60)</td>
<td>0.859</td>
</tr>
<tr>
<td>CPR after (mg/dL)</td>
<td>0.50 (±0.52)</td>
<td>0.509</td>
</tr>
<tr>
<td>AGP before (mg/dL)</td>
<td>86.84 (±41.3)</td>
<td>0.129</td>
</tr>
<tr>
<td>AGP after (mg/dL)</td>
<td>78.35 (±21.94)</td>
<td>0.129</td>
</tr>
<tr>
<td>Calprotectin before (µg/g)</td>
<td>387.45 (±168.57)</td>
<td>0.009*</td>
</tr>
<tr>
<td>Calprotectin after (µg/g)</td>
<td>103.77 (±173.21)</td>
<td>0.009*</td>
</tr>
</tbody>
</table>

References

Change with same therapeutic target (SWITCH) and drug change with different therapeutic target (SWITCH). The Student’s t test for correlated groups was performed but any intervention involving SWAP or SWITCH was excluded. Asymptomatic patients without altered APR and optimal plasma adalimumab concentrations maintained the same treatment scheme. Results

89 patients were analysed and 41 (46%) patients were proposed and accepted for interventions, of whom 22 (54%) were men with a mean age of 40 years (18–66). The data are shown in table 1. Interventions performed: 21 (51%) deintensification, 10 (24%) intensification, 7 (17%) SWAP and 3 (7%) SWITCH. Symptomatic patients before interventions totalled 19 (46%); after the interventions 4 (10%) patients remained symptomatic, 3 after intensification and 1 after a treatment SWITCH.

Conclusion and relevance

APR improved after interventions. Faecal calprotectin showed a significative p value. Further studies are required. Monitoring adalimumab along with clinical patient data is crucial to optimalise IBD control. This practice is effective, safe and contributes to the sustainability of the health system, saving possible adverse effects and money. Clinical pharmacists have a crucial role in optimal clinical patient development.

References and/or Acknowledgements

Conflict of interest

No conflict of interest

4CPS-331

INFLAMMATORY PARAMETER ANALYSIS IN SEVERE COVID-19 PATIENTS TREATED WITH TOCILIZUMAB

C Del Pozo Caravilla, 1M Clemente Andújar, 1S Plata Paniagua, 1M Del Pozo Caravilla, 1S Ruiz Sánchez, 2B Serna Serrano, 3CS Juan Manuel, 1TE Tebar Martínez, 2HA Alabert Ayllón, 1M Sáez Garrido. 1Complejo Hospitalario De Albacete, Hospital Pharmacy, Albacete, Spain; 2Complejo Hospitalario De Albacete, Paediatrics, Albacete, Spain

Background and importance

Tocilizumab (TCZ) is an immunosuppressor drug, IL-6 inhibitor, indicated for the treatment of rheumatoid arthritis and cytokine release syndrome associated with CAR T cell therapy.

It was proposed as a compassionate treatment for severe COVID-19 due to its potential benefit as anticytokine therapy with IL-6 as the target, one of the most relevant cytokines involved in the cytokine storm induced by COVID-19.

Aim and objectives

The main objective was to evaluate TCZ effectiveness in the modification of inflammatory parameters in severe COVID-19 patients.

Material and methods

A retrospective observational study was conducted in 46 patients with COVID-19 admitted to an intensive care unit (ICU) and treated with TCZ from 20 March to 20 May 2020 at a tertiary hospital. Variables analysed were: age, sex, levels of IL-6, C reactive protein (CRP), ferritin, lymphocytes count and D-dimer on days 0, 1, 3, 7 and 14 after TCZ administration. Days in the ICU, deaths and patient outcomes were also obtained.

Results

Median age was 64 years and 67.4% of patients were men. IL-6 levels on day 0 were 293 pg/mL, peaking at 416 pg/mL on day 3 and decreasing to 241.9 pg/mL on day 7. CRP levels increased above the normal range (median 53.33 mg/L on day 0) in all patients before initiation of therapy with TCZ and decreased on day 7 (median 3 mg/L). Serum ferritin decreased from 1798 mg/L on day 1 to 1197.5 mg/L on day 7 before TCZ. Lymphocyte count increased from 570 to 1365 lymphocytes/µL on day 7.

D-dimer level on day 0 was 2008 ng/mL and increased to 3910 ng/mL on day 7 and decreased to 1723 ng/mL on day 14. Length in ICU stay was 16.4 days compared with the mean stay of the total number of ICU COVID patients, which was 26.1 days. Mortality was 19.6%, 15.2% remained in hospital at the end of the study and 65.2% were discharged.

Conclusion and relevance

The results showed an improvement in inflammatory markers with TCZ treatment, as well as a decrease in length of stay in the ICU, similar to findings reported in the literature. Nevertheless, because of potential bias due to patients receiving different treatments before and after TCZ and the small sample size, it is necessary to confirm these results in controlled clinical studies.

References and/or Acknowledgements

Conflict of interest

No conflict of interest

4CPS-332

TOCILIZUMAB FOR TREATING COVID PNEUMONIA: ANALYSIS OF EFFECTIVENESS AND SECURITY

C Del Pozo Caravilla, 1M Clemente Andújar, 1S Plata Paniagua, 1M Del Pozo Caravilla, 1S Ruiz Sánchez, 1B Serna Serrano, 1JM Collado Sanz, 1TE Tebar Martínez, 2HA Alabert Ayllón, 1M Sáez Garrido. 1Complejo Hospitalario De Albacete, Hospital Pharmacy, Albacete, Spain; 2Complejo Hospitalario De Albacete, Paediatrics, Albacete, Spain

Background and importance

Tocilizumab (TCZ) is an immunosuppressor drug, IL-6 inhibitor, indicated for the treatment of rheumatoid arthritis and cytokine release syndrome associated with CAR T cell therapy.

It was proposed as a compassionate treatment for severe COVID-19 due to its potential benefit as anticytokine therapy with IL-6 as the target, one of the most relevant cytokines involved in the cytokine storm induced by COVID-19.

Aim and objectives

The main objective was to evaluate TCZ security and effectiveness in the treatment of COVID-19 pneumonia.

Material and methods

A retrospective observational study was conducted in patients with COVID-19 pneumonia treated with TCZ from 20 March to 20 May 2020 at a tertiary hospital.

Aim and objectives

The main objective was to evaluate TCZ effectiveness in the modification of inflammatory parameters in severe COVID-19 patients.

Material and methods

A retrospective observational study was conducted in 46 patients with COVID-19 admitted to an intensive care unit (ICU) and treated with TCZ from 20 March to 20 May 2020 at a tertiary hospital. Variables analysed were: age, sex, levels of IL-6, C reactive protein (CRP), ferritin, lymphocytes count and D-dimer on days 0, 1, 3, 7 and 14 after TCZ administration. Days in the ICU, deaths and patient outcomes were also obtained.

Results

Median age was 64 years and 67.4% of patients were men. IL-6 levels on day 0 were 293 pg/mL, peaking at 416 pg/mL on day 3 and decreasing to 241.9 pg/mL on day 7. CRP levels increased above the normal range (median 53.33 mg/L on day 0) in all patients before initiation of therapy with TCZ and decreased on day 7 (median 3 mg/L). Serum ferritin decreased from 1798 mg/L on day 1 to 1197.5 mg/L on day 7 before TCZ. Lymphocyte count increased from 570 to 1365 lymphocytes/µL on day 7.

D-dimer level on day 0 was 2008 ng/mL and increased to 3910 ng/mL on day 7 and decreased to 1723 ng/mL on day 14. Length in ICU stay was 16.4 days compared with the mean stay of the total number of ICU COVID patients, which was 26.1 days. Mortality was 19.6%, 15.2% remained in hospital at the end of the study and 65.2% were discharged.

Conclusion and relevance

The results showed an improvement in inflammatory markers with TCZ treatment, as well as a decrease in length of stay in the ICU, similar to findings reported in the literature. Nevertheless, because of potential bias due to patients receiving different treatments before and after TCZ and the small sample size, it is necessary to confirm these results in controlled clinical studies.

References and/or Acknowledgements

Conflict of interest

No conflict of interest