POS1199

CLINICAL MANIFESTATIONS OF SARS-CoV2 INFECTIONS IN CHILDREN AND ADOLESCENTS WITH RHEUMATIC AND MUSCULOSKELETAL DISEASES – SURVEY DATA FROM GERMANY

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Background: Although children and adolescents are less likely to develop COVID-19 and generally show milder disease courses, it is unclear what impact the SARS-CoV2 infection has on children and adolescents with rheumatic and musculoskeletal disease (RMD). Due to their underlying disease as well as therapeutic immunosuppression these patients may be at higher risk of being more severely affected by SARS-CoV2. Furthermore, SARS-CoV2 infection might trigger a flare of the underlying disease.

Objectives: To evaluate clinical characteristics and disease course of COVID-19 in children and adolescents with RMD and to analyze possible effects of SARS-CoV2 infection on the underlying disease under different therapeutic regimens.

Methods: Data from juvenile patients with RMD recorded via the SARS-CoV2 questionnaire within the National Pediatric Rheumatology Database and the registry for hospitalized children and adolescents with COVID-19 of the German Society for Pediatric Infectious Diseases were analyzed. In addition to age, sex and diagnosis, information was collected about the date and method of a positive SARS-CoV2 testing, reason for testing, on clinical manifestations, disease course, treatment and outcome of COVID-19, on drug therapy at the time of virus detection, on disease activity (NRS 0 – 10, 0 = best) of the underlying disease at the last visit before and after the SARS-CoV2 infection.

Results: From April 17th 2020 until January 25th 2021, data of 67 patients with RMD and confirmed SARS-CoV2 infection were collected. Mean age was 13.5 ± 3.9 years with equal sex distribution. The majority of patients were diagnosed with juvenile idiopathic arthritis (JIA, 64%), 12 (18%) patients had an autoinflammatory disease (FMF, CAPS, PFAPA, TRAPS) and 5 (7%) a connective tissue disease. Fifty-two patients (78%) were treated with a disease modifying antirheumatic drug (DMARD), 39% with a biological DMARD and 9% systemic glucocorticoids at the time of SARS-CoV2 infection. Nineteen patients (28%) were tested for SARS-CoV2 because of typical symptoms, the majority (67%) because of contact to an infected person. PCR was used most often (in 60 %).

52 patients (78%) developed symptoms of COVID-19, 15 patients remained asymptomatic. The most common symptom of COVID-19 was rhinitis (42%) and fever (38%), followed by fatigue (34%), taste/smell disorder (33%), sore throat (27%) and cough (23%).

Disease severity was graded as mild in 44 of 52 (85%) symptomatic patients, only two patients were hospitalized, one of whom required intensive care and died of cardiorespiratory failure 3 days after symptom onset. In 22 of 26 (85%) SARS-CoV2-positive patients, no relevant increase in disease activity (difference in NRS ≤ 1 before/after infection) of the underlying disease was observed 31 days after symptom onset (median, IQR 17-52 days). One patient, who had paused tocilizumab for 2 doses, experienced a flare of his seronegative polyarthritis 2 months after asymptomatic SARS-CoV2 infection.

Conclusion: In our cohort, the clinical picture of COVID-19 in children and adolescents with RMD was similar to that of healthy peers. The majority of patients

showed mild disease course with good outcome under various medications, however, one patient with a severe course of COVID-19 died. In addition, SARS-CoV2 infection does not appear to have a relevant impact on the underlying disease activity, whereas discontinuation of therapy might pose a risk of flare.

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POS1200

IL-6 HIGHER LEVEL AFTER TOCILIZUMAB TREATMENT AS A PREDICTOR OF NOT-SURVIVAL IN COVID19 SEVERE PNEUMONIA: THE EXPERIENCE OF THE COVIBAS-STUDY

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Background: Cytokine release storm is the most fearsome complication associated with worse outcomes in COVID-19 patients with severe acute respiratory failure. In COVID-19 patients, interleukin-6 (IL-6) levels are significantly elevated. Blocking IL-6 preliminarily resulted in the improvement of this hyper-inflammatory state.

Objectives: To define if the serum level of IL-6 early tested after tocilizumab treatment could be useful to distinguish non-survivors from survivors in patients with severe respiratory failure due to COVID-19 pneumonia.

Methods: This prospective cohort study was conducted at two referral hospitals for management of COVID-19 in Basilicata region, Italy: San Carlo Hospital, Potenza and Madonna delle Grazie Hospital, Matera. All consecutive patients with COVID-19 confirmed by RT-PCR testing of a naso-opharyngeal swab. The enrolment period was from the 23rd of February to the 15th of August. 37 patients between all 124 underwent tocilizumab 8 mg/kg intravenously at baseline and after 24h. All patients were tested for serum IL-6, 24 hours before and 72 hours after tocilizumab infusion. Comparisons between survivors (Sv) and nonsurvivors (NSv) were performed.

Results: 21 patients were discharged, while 16 patients died. The main clinical or laboratory differences ($p < 0.001$) between the two groups at baseline were mean diseases duration before ward admission and serum troponine levels. IL-6 was not different at baseline ($p = 0.01$), while 72 hours post-tocilizumab IL-6 serum levels were significantly higher in non-survivors than in survivors [(Sv 21.1%)vs(NSv 64%) $p < 0.001$]. Serum IL-6 post-tocilizumab could be considered a good predictor to discriminate Sv from NSv. At multivariate stepwise analysis including disease duration at admission, baseline serum troponine levels and IL-6 post TCZ) were independent predictors of not survival

Conclusion: Our data confirm the results of Quartuccio et al. In fact the highest burden of inflammation may be revealed by IL-6 levels after tocilizumab. Therefore repeated measurement of the serum level of IL-6 early after tocilizumab could be useful to distinguish non-survivors from survivors and support the choice of deeper targeting IL-6 in COVID-19 pneumonia.

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