

None of them participated or influenced the development of the project, data collection, analysis, interpretation, or writing the report. They do not have access to the information collected in the database., Karen Roberts Grant/research support from: SAR-COVID is a multi-sponsor registry, where Pfizer, Abbvie, and Elea Phoenix provided unrestricted grants. None of them participated or influenced the development of the project, data collection, analysis, interpretation, or writing the report. They do not have access to the information collected in the database., Guillermo Pons-Estel Grant/research support from: SAR-COVID is a multi-sponsor registry, where Pfizer, Abbvie, and Elea Phoenix provided unrestricted grants. None of them participated or influenced the development of the project, data collection, analysis, interpretation, or writing the report. They do not have access to the information collected in the database.

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AB1299

### THE INCIDENCE OF POST-COVID SYNDROME IN PATIENTS WITH RHEUMATIC DISEASES

**Keywords:** Mental health, Comorbidities, COVID

N. Tileubek<sup>1</sup>, N. Shamsutdinova<sup>2</sup>, V. Mukhamadiev<sup>3</sup>, D. Abdulganieva<sup>3</sup>, R. Abdrakipov<sup>4</sup>, S. Lapshina<sup>3</sup>. <sup>1</sup>Institute of Gastroenterology, Hepatology and Metabolism "Interna Clinic"; Rheumatology, Rheumatology, Almaty, Kazakhstan; <sup>2</sup>Kazan State Medical University, Internal Diseases, Kazan, Russian Federation; <sup>3</sup>Kazan State Medical University, Internal Diseases, Kazan, Russian Federation; <sup>4</sup>Republic Clinical Hospital, rheumatology, Kazan, Russian Federation

**Background:** Post-COVID Syndrome occurs in people after coronavirus infection with confirmed SARS-CoV-2 infection or in people with suspected coronavirus infection, usually 3 months after the onset of COVID-19, with symptoms that last at least 2 months and cannot be explained by an alternative diagnosis. Although post-COVID manifestations have been previously studied in the general population, they have not been studied in a specific population of patients with inflammatory rheumatic diseases. The list of post-covid syndromes includes arthralgia, arthritis, myalgia, vasculitis with damage to vessels of various sizes, antiphospholipid syndrome, as well as a number of immunological markers that are characteristic of a wide range of rheumatic diseases [1]

**Objectives:** to study the incidence of post-COVID syndrome in patients with rheumatic diseases (RD).

**Methods:** From March 2020 to September 2022, 271 patients with RD who had a novel coronavirus infection (NCI) with a confirmed SARS-CoV-2 PCR result and/or X-ray computed tomography (CT) of the lungs were under observation. Among the patients, 68 (25%) were males, 203 (75%) were females. The median age was 56 [46.65] years. The average duration of RD at the time of NCI was 10.9 [5.15] years. The distribution of patients was as follows: rheumatoid arthritis (RA) - 186 people (68.6%), ankylosing spondylitis (AS) - 46 people (16.9%), psoriatic arthritis (PsA) - 38 people (14%). The results of clinical and laboratory examinations for RD were assessed before the NCI and 3 and 6 months after the NCI. A survey of patients was conducted as part of an in-depth medical examination 3 and 6 months after undergoing NCI for the presence of post-COVID manifestations.

**Results:** 90.4% of patients noted the persistence or appearance of symptoms after undergoing NCI, and all of them had a combination of at least 3 different groups of symptoms. The most common increase/appearance of pain in the joints was 91.1%. Among the respondents, the second symptom in terms of frequency of occurrence, in 52.9% of cases, were asthenic manifestations in the form of the appearance and intensification of fatigue, muscle pain, headaches. A decrease in working capacity and quality of life was noted by 52.9%. Complaints about a significant increase in dyspnea and a decrease in exercise tolerance were noted by 35.3% of the respondents, while there was no connection with the severity of NCI, and half of the patients had a mild course of NCI. Increased chest pain and/or palpitations - in 23.5% of people. Half of the patients noticed hair loss and skin rash at 3-6 months after NCI: significant 35.2%, insignificant 20.5%. A slight persistence of elevated temperature since recovery from NCI was recorded in 17.6% of patients. RD stage of remission before NCI was in 9 (3.3%), low degree of activity 58 (21.4%), moderate degree of activity 140 (51.6%), high degree of activity 21 (7.7%), 43 (15.8%) people - no data. Moderate and high degrees of RD activity before NCI influenced the increase in joint pain ( $p < 0.023$ ), unstable course of diabetes mellitus ( $p < 0.032$ ) by 3 after recovery.

**Conclusion:** In patients with RD, post-covid manifestations persist, primarily due to articular (91.1%) and general constitutional symptoms (85.3%) from 3 to 6 months after undergoing NCI. Moderate and high degrees of RD activity before NCI significantly affect the severity of the articular syndrome and the unstable course of diabetes mellitus. Therapy for post-COVID syndrome in patients with rheumatological diseases should be personalized and determined by the characteristics of this patient's condition.

#### REFERENCE:

[1] Lapostolle F., Schneider E., Vianu I., Dollet G., Roche B., Berdah J., Michel J., Goix L., Chanzy E., Petrovic T., Adnet F. Clinical features of 1487 COVID-19 patients with outpatient management in the Greater Paris: the

COVID-call study// Intern. Emerg. Med. 2020. Vol. 15 (5). P. 813–817. <https://doi.org/10.1007/s11739-020-02379-z>

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AB1300

### RHEUMATOLOGICAL MANIFESTATIONS IN A COHORT OF LONG-COVID PATIENTS: SEARCHING FOR POSSIBLE BIOMARKERS

**Keywords:** COVID

A. Paglionico<sup>1</sup>, P. Rizzuti<sup>2</sup>, V. Varriano<sup>1</sup>, C. Di Mario<sup>3</sup>, S. Perniola<sup>1</sup>, R. Calvani<sup>4</sup>, A. Picca<sup>4</sup>, F. Landi<sup>4</sup>, M. Tosato<sup>4</sup>, B. Toluoso<sup>3</sup>, E. Gremese<sup>1,3</sup>. <sup>1</sup>Fondazione Policlinico Universitario A. Gemelli, IRCCS, Division of Clinical Immunology, Rome, Italy; <sup>2</sup>Università Cattolica del Sacro Cuore, -, Rome, Italy; <sup>3</sup>Fondazione Policlinico Universitario A. Gemelli IRCCS, Immunology Core Facility, Gemelli Science Technological Park, GStEP, Rome, Italy; <sup>4</sup>Fondazione Policlinico Universitario A. Gemelli IRCCS, -, Rome, Italy

**Background:** Approximately 10-20% of patients recovered from SARS-CoV-2 infection develop persistent heterogeneous symptoms and autoantibody positivity suggesting persistence of low-grade inflammation.

**Objectives:** To assess the prevalence of rheumatological manifestations in a cohort of convalescent SARS-CoV-2 patients and to find possible biomarkers.

**Methods:** Two-hundred and seventy-nine convalescent SARS-CoV-2 patients underwent multidisciplinary assessment in our Post-Covid19 outpatient service (119 females and 160 males; mean age $\pm$ SD, 55.87 $\pm$ 0.88). For each patient, demographic, clinical and immunological data were collected. Long-COVID symptoms were assessed by a questionnaire submitted to patients; IL-1 $\beta$ , IL-6, TNF $\alpha$  and e IL-8 plasma levels were assessed by ELISA (ELLA).

**Results:** 221 (80.7%) convalescent SARS-CoV-2 patients presented at least one Long-Covid symptom, most frequently fatigue (52.6%), dyspnea (40.7%), arthralgia (28%) and myalgia (28%). The prevalence of symptoms was significantly higher in females ( $p = 0.009$ ) and in patients 60-75 years old ( $p = 0.02$ ) and the presence of symptoms was independent from disease severity and care setting during acute infection. Assessing cytokines plasma levels, we observed that patients presenting Long-COVID arthralgia showed higher IL-6 plasma levels ( $p = 0.006$ ). Moreover, the most common rheumatological symptoms, asthenia and arthralgia, in Long-COVID patients were significantly correlated with female sex ( $p = 0.002$ ), at least one autoantibody positivity ( $p = 0.003$ ) and IL-6 plasma level higher than 2.1 pg/ml ( $p = 0.009$ ).

**Conclusion:** Rheumatological symptoms are frequent in Long-Covid patients and this study suggests that they are underpinned by persistent dysregulated inflammatory pathways after the acute infection.

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AB1301

### CYCLOPHOSPHAMIDE THERAPY DURING THE COVID19 PANDEMIC

**Keywords:** Vasculitis, COVID, Best practices

B. Bitik<sup>1</sup>, C. S. Oygur<sup>2</sup>, A. Yalçıntaş Kanbur<sup>2</sup>, A. E. Yuce<sup>2</sup>. <sup>1</sup>Başkent University Ankara Hospital, Rheumatology, Ankara, Turkey; <sup>2</sup>Başkent University Ankara Hospital, Rheumatology, Ankara, Turkey

**Background:** During the Coronavirus disease (COVID-19) pandemic, one of the biggest concerns of rheumatologists and rheumatology patients has been whether the risk or severity of the disease will increase with immunosuppressive therapy. Some drugs have been reported to be associated with adverse Covid19 outcomes [1,2]. Cyclophosphamide (CYC) is a drug that has been used in rheumatology practice for many years. There is not enough data in the literature on the frequency or consequences of COVID-19 while receiving CYC therapy.

**Objectives:** The aim of this study is to examine the frequency and outcomes of Covid19 in patients who received CYC therapy during the Covid19 pandemic.

**Methods:** The files of patients who received CYC therapy protocol between March 2020 and March 2022 at Başkent University Faculty of Medicine Ankara Hospital, Rheumatology outpatient clinic were retrospectively reviewed. In our clinic, CYC therapy is administered as an intravenous treatment protocol of 500mg three times every 10 days, then 500mg every two weeks. Although the cumulative dose varies depending on the disease and the patient, it is usually planned to be at least three gram. The diagnosis of Covid 19 was made in the patients with clinically compatible radiology and SARS-CoV-2 PCR test results.

**Results:** A total of 36 patients received CYC during the specified period. CYC indications were ANCA-associated vasculitis in 12 patients, interstitial lung disease

associated with undifferentiated connective tissue disease in 5 patients, SLE in 5 patients, scleroderma in 4 patients, Sjögren's syndrome in 4 patients, Behçet's disease in 1 patient, vasculitis associated with sarcoidosis in 1 patient, rheumatoid vasculitis in 1 patient, leukocytoclastic vasculitis in 1 patient, polymyositis in 1 patient and Takayasu disease in 1 patient. The median age (q1-q3) was 62 (52-68) years. Covid19 infection was detected in only 3 patients (8%) during the CYC therapy protocol. The median cumulative CYC dose for these patients was 3.5g. One out of 3 patient was hospitalized for Covid 19 pneumonia. There was no death due to Covid19.

**Conclusion:** In this study, it has been shown that CYC therapy was safe during the Covid19 pandemic period.

#### REFERENCES:

- [1] Samanta J, Naidu G, Deo P, Mittal S, Prasad CB, Das D, Dhir V, Sharma SK, Ramachandran R, Rathi M, Nada R, Minz RW, Jain S, Sharma A. Managing ANCA-associated vasculitis during COVID-19 pandemic: a single-center cross-sectional study. *Rheumatol Int.* 2022 Dec;42(12):2159-2166.
- [2] Singh N, Madhira V, Hu C, Olex AL, Bergquist T, Fitzgerald KC, Huling JD, Patel RC, Singh JA. Rituximab is associated with worse COVID-19 outcomes in patients with rheumatoid arthritis: A retrospective, nationally sampled cohort study from the U.S. National COVID Cohort Collaborative (N3C). *Semin Arthritis Rheum.* 2023 Feb;58:152149.

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#### AB1302 IMPACT OF THE COVID-19 PANDEMIC ON TREATMENT ADHERENCE AND THE ACTIVITY OF RHEUMATOID ARTHRITIS

**Keywords:** Outcome measures, Rheumatoid arthritis, COVID

M. Ghali<sup>1</sup>, M. Ardhaoui<sup>1</sup>, J. Mahboubia<sup>1</sup>, S. Zrour<sup>1</sup>, I. Bejjia<sup>1</sup>, M. Touzi<sup>1</sup>, N. Bergaoui<sup>1</sup>. <sup>1</sup>Fattouma Bourguiba Hospital, University of Monastir, Rheumatology, Monastir, Tunisia

**Background:** During the COVID-19 pandemic, repetitive lockdowns and fear of SARS-CoV-2 infection compromised the treatment adherence of immunocompromised patients, particularly those with rheumatoid arthritis (RA). These therapeutic changes have certainly affected RA activity.

**Objectives:** To assess the treatment adherence among RA patients during COVID-19 and the impact on disease activity.

**Methods:** We conducted a cross-sectional study involving patients with RA who met the ACR/EULAR 2010 criteria. To evaluate therapeutic adherence we used 2 validated scores: the Compliance Questionnaire of Rheumatology-5 (CQR-5) and the Morisky Medication Adherence Scale-4 (MMAS-4). For each patient, we compared the DAS28 score, visual analog pain scale (VAS), sedimentation rate (ESR), and C-reactive protein (CRP) before and during the pandemic.

**Results:** We included 190 patients, of whom 155 were women and 35 were men. The average age was 55 ± 13.16 years. During the COVID-19 pandemic, the mean DAS28 score was 4.17 ± 1.03. Poor adherence was observed in 33% of cases according to MMAS-4 and in 34.5% of cases according to CQR-5. Patients who missed at least one consultation appointment accounted for 65% of cases. Teleconsultation was used in 17% of cases. Non-renewal of the prescription was the most frequent reason for therapeutic modification (47%). Sixty patients (31.7%) had contracted COVID-19 and the minor form was the most frequent (86% of cases). Poor therapeutic adherence assessed by the CQR-5 was significantly associated with: rural origin (p<0.001), low intellectual level (p=0.006), missed consultations (p<0.001), non-use of teleconsultation (p<0.001), and high disease activity (p<0.001). Factors associated with poor adherence according to MMAS-4 were: advanced age (p=0.01), rural origin (p=0.007), low intellectual level (p=0.004), comorbidities (p=0.003), failed consultations (p=0.001), non-use of teleconsultation (p<0.001) and SARS-CoV-2 infection (p=0.043). The correlational study showed that compared to pre-pandemic values: pain (p=0.001), ESR (p=0.008), CRP (p=0.04), and DAS-28 (p=0.001) were significantly higher during the pandemic. Increased disease activity was significantly associated with the presence of comorbidities (p=0.018), low therapeutic adherence (p<0.001), and missed consultations (p=0.014). There was no significant association between SARS-CoV-2 infection and disease activity.

**Conclusion:** Treatment adherence of RA patients during the COVID-19 era was challenged. Elderly, illiterate, and rural patients were the most likely to miss their appointments and stop their treatments. These therapeutic changes were responsible for an increase in RA activity. Hence the importance of insisting on good adherence and close medical follow-up.

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#### AB1303 AVASCULAR NECROSIS OF THE FEMORAL HEAD – NOT TO BE OVERLOOKED SEQUELA AFTER COVID 19 INFECTION

**Keywords:** Bone diseases, COVID

P. Todorov<sup>1</sup>, L. Mekenyan<sup>2</sup>, A. Batalov<sup>2</sup>. <sup>1</sup>Medical University of Plovdiv, "Kaspela" University Hospital, Propaedeutic of Internal Disease and Clinic of Rheumatology, Plovdiv, Bulgaria; <sup>2</sup>Medical University of Plovdiv, "Kaspela" University Hospital, Propaedeutic of Internal Disease and Clinic of Rheumatology, Plovdiv, Bulgaria

**Background:** COVID 19 infection could lead to different sequelae in survivors, known as post-COVID or long COVID 19 syndromes. Some of them are thought to be due to the thrombolytic changes observed in COVID 19 infection, but some are thought to be caused by the administered (especially high dose) corticosteroid treatment. Avascular necrosis of the femoral head (AVNHF) is a multifactorial disease which leads to compromised vascular supply, ischemia and finally necrosis of the femoral head. As corticosteroids usage and thrombolytic states are among the main known risk factors for the development AVNHF [1], it could be presumed that the frequency of this disease will increase with the COVID 19 pandemic. The exact corticosteroid dose needed for the development of AVNHF is not clear, but it has been stated that a higher daily dose and a larger total cumulative dose increase substantially the risk for the development of osteonecrosis [2].

**Objectives:** To describe in detail the characteristics of AVNHF diagnosed in patients after COVID 19 infection.

**Methods:** The study was done in a tertiary university rheumatological clinic. Data was extracted from the records of patients who have been referred to the clinic because of hip pain between June and December 2022. Inclusion criteria were: - a new onset of uni- or bilateral hip pain that started after a documented COVID 19 infection; and an MRI scan of the hip joints showing osteonecrosis of one or both femoral heads. Exclusion criteria were the presence of hip pain prior to the COVID 19 infection, anamnesis of traumatic injuries of the hips or pelvis, personal history of hypercoagulable states.

**Results:** Nine patients (4 women and 5 men) with an average age 59.1 years (range 38-72) were included in the study. Four patients had been diagnosed with bilateral and five – with unilateral AVNHF, thus 13 hip joints were analysed in total (8 left and 5 right sided). The mean time lap between the COVID 19 infection and the start of the hip pain was 26.2 weeks (range 10-48 weeks). All patients had limited and painful movement in their symptomatic hip(s), especially internal rotation and four of the patients had also elevated CRP levels (mean 11.7 mg/L). The stage of the AVNHF was evaluated according to the Ficat-Arlet classification (0-IV stage). In four hips the AVNHF was stage I, five hips were classified as stage II and the remaining four joints - as stage III. All symptomatic hip joints exhibited effusion/synovitis on both ultrasound examination and the corresponding MRI scan. It should be noted that the presence of hip effusion was found to be related with a worse prognosis in AVNHF [1]. In three patients the amount of the effusion required arthrocentesis and fluid aspiration. The analysis of the joint fluid was consistent with a degenerative disease (i.e., low WBC count with predominant lymphocytes and no crystals). All patients included in our study had received corticosteroids during their COVID19 infection, while 6 of the patients had also been hospitalized due to more severe disease. According to the patients' documentation, the mean cumulative dose of the received corticosteroids was 936.2 mg prednisolone equivalent per patient (range 187-2272 mg).

**Conclusion:** AVNHF must not be overlooked in a new onset hip pain after COVID 19 infection. Our results show that corticosteroids administered during the infection and the presence of hip joint effusion on ultrasound are especially suggestive for the development of osteonecrosis, as they were registered in all of our patients. The presence of these two factors necessitates patient referral for an MRI scan of the hips, in order that AVNHF be detected timely.

#### REFERENCES:

- [1] Petek D, Hannouche D, Suva D. Osteonecrosis of the femoral head: pathophysiology and current concepts of treatment. *EFORT Open Rev.* 2019 Mar 15;4(3):85-97.
- [2] Kerachian MA, Séguin C, Harvey EJ. Glucocorticoids in osteonecrosis of the femoral head: a new understanding of the mechanisms of action. *J Steroid Biochem Mol Biol.* 2009 Apr;114(3-5):121-8.

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#### AB1304 CHRONIC CHILBLAIN-LIKE LESIONS ASSOCIATED WITH THE COVID-19 PANDEMIC

**Keywords:** Imaging, COVID, Skin