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ANALYSIS OF SARS-COV-2 ANTIBODIES IN NON-COVID-19 PATIENTS: COMPARISON BETWEEN SYSTEMIC SCLEROSIS PATIENTS AND HEALTHY CONTROLS

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Background: Previous study evidenced a cross-reactivity between Sars-Cov-2 antibodies and autoimmune tissue antigen involved in connective tissue diseases, as nuclear antigen (NA), extractable nuclear antigen (ENA), histone and collagen (1). No study has been published about the titer of Sars-Cov-2 antibodies in non-infected patients with autoimmune disease.

Objectives: To evaluate the titer of SARS-CoV-2 antibodies in non-COVID-19 patients and compare it between systemic sclerosis (SSc) patients and healthy controls (HC).

Methods: A total of 58 patients with SSc (who fulfilled ACR/EULAR 2013 SSc classification criteria) and 18 HC were enrolled. Sera of all participants were collected, and SARS-CoV-2 antibodies (IgG and IgM) were evaluated by means ELISA. In all participants swabs for SARS-CoV-2 by real-time reverse-transcriptase-polymerase-chain-reaction assay were reported negative. Demographic, clinical, and autoimmune serological characteristics of SSc patients were recorded. The normal distribution was assessed using the Shapiro-Wilk's test. Exclusion criteria was previous or actual Sars-Cov-2 infection. Comparisons between study groups of patients were evaluated by the Student's t-test or Mann - Whitney U-test as appropriate. The differences between categorial variables were assessed by Pearson chi-square or Fisher's exact test, as opportune. Statistical significance was set at $p \leq 0.05$.

Results: We observed significant differences between SSc patients and HC in serum levels of Sars-Cov-2 antibodies (IgG: 1.4 ± 2.1 AU/ml vs 0.36 ± 0.19 AU/ml respectively ($p=0.001$); and IgM: 2.5 ± 3.1 AU/ml vs 0.8 ± 0.7 AU/ml ($p=0.022$)). In 5 SSc patients was found titer of Sars-Cov-2 antibodies (IgG) exceeding the cut-off, but the control of swabs for SARS-CoV-2 by real-time reverse-transcriptase-polymerase-chain-reaction assay were negative. No significative differences in Sars-Cov-2 autoantibodies titer were found in subgroup of SSc patients with or without ILD or PAH, limited or diffuse skin subset, and different autoantibodies profile. Furthermore, antibodies titer was not associated with different drugs (steroid, methotrexate, mofetil-mycophenolate and bosentan) in use.

Conclusion: A cross mimicking between Sars-Cov-2 antibodies and antinuclear antibodies or anti ENA could be hypothesized. Further studies are necessary to unravel the reliability of Sars-Cov-2 antibodies detection in autoimmune disease.

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REACTIVE ARTHRITIS ASSOCIATED WITH COVID-19 INFECTION: A REVIEW

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Background: The incidence of COVID-19 infection is increasing globally with high mortality rate. Cytokine release syndrome might contribute to extra-pulmonary manifestations such as acute kidney injury, venous thrombosis, neurological complications, hepatic and myocardial injury. Reactive arthritis is an emerging musculoskeletal (MSK) manifestation post COVID-19 infection. Reactive arthritis manifests as asymmetrical, oligoarthritis mainly involving peripheral or axial joints of lower extremities and associated with extra-articular manifestations.

Objectives: review the clinical presentation and management outcomes of COVID-19 associated reactive arthritis.

Methods: A literature research was conducted using PubMed and Google scholar for published abstracts, case reports, and studies from January 2020 to January 2021. We used search keywords "reactive arthritis", "COVID-19 pneumonia", "SARS CoV2 infection", and "Musculoskeletal". Descriptive analysis was used due to small sample size.

Results: COVID-19 associated reactive arthritis is rarely reported. In review of literature, 10 cases were identified and we included our case of hip arthritis and avascular necrosis post COVID-19 infection. The mean age of cases (n=11) was of 42.8 years and 54.5 % of patients were males. (Table 1) The median duration of reactive arthritis diagnosis from COVID-19 infection ranged from 1 to 8 weeks. The severity of COVID-19 infection varied from mild (n= 6) to severe disease (n=2) per description in each reported case. Majority of the patients had

oligoarticular involvement (2 to 4 joints) 45.5%, followed by monoarticular 36.4%, and polyarticular (> 4 joints) in 18%. Extra-articular manifestations were identified in 54.5% of patients including skin rash (erythematous itchy rash), urticarial rash, wrist tendinitis, Achilles enthesitis /tendonitis and balanitis. HLA-B27 testing was done in five patients and only one patient had a positive result. Plain radiographs were normal. Therapy provided of such cases were NSAIDs (n=4), steroids (oral, intra-articular) (n=1) or combination of steroids and NSAIDs (n=3) with favorable outcomes. The median reported follow up period ranged from 1.5 to 8 weeks.

Table 1. Characteristics of the reported reactive arthritis cases post COVID-19 infection

Clinical data of patients (n=11)	Results (n=11)
Age (mean)	42.8 Years old
Sex %	Female (n= 5 [45.5%]) Male (n= 6 [54.5%])
Severity of COVID-19 infection	Mild (n=6 [54.5%]) Moderate (n=3 [27.3%]) Severe (n= 2 [18%])
Prior history of rheumatologic disease	(n=0)
Time to onset of reactive arthritis (median)	1 to 8 weeks
Number of joints involved at time of diagnosis	Monoarticular (n= 4[36.4%]) Oligoarticular (n= 5[45.5%]) Polyarticular (n= 2[18%]) Upper joints (18%) Lower joints (54.5%) Both (27.3%)
Enthesitis	(n= 1[9%]) Achilles
Tendonitis	(n= 2[18%]) (wrist / Achilles tendonitis)
Extra-articular involvement (eyes, skin, GI, GU, others)	- Skin rash (n=2 [18%]) (erythematous itchy rash, urticarial rash) - GU: balanitis (n=1 [9%]) (n=0)
Inflammatory back pain	(n= 1[9%])
Avascular necrosis of bone	(n= 1[9%]), (n= 5 tested)
HLA-B27	Negative
Autoimmune workup	DMARDs (n=0)
Treatment of reactive arthritis:	NSAIDs (n=4 [36.4%]) Steroids (n=1 [9%]) NSAIDs and steroids (n= 3[27.3%]) Not provided (n=2), others (n=1)
Outcomes of MSK symptoms	Improvement (n=11 [100%])
Follow up period (Median, weeks)	1.5 to 8 weeks

Gastrointestinal (GI), genitourinary (GU), NSAIDs: non-steroidal anti-inflammatory drug

Conclusion: Reactive arthritis is a rare MSK manifestations post COVID-19 infection. HLA-B27 positive testing might indicate severe and delayed form of arthritis with risk of recurrence. Larger studies are required to delineate the potential risk factors and long-term management outcomes for reactive arthritis associated with COVID-19 infection.

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NON-STEROIDAL ANTI-INFLAMMATORY DRUGS DURING CORONAVIRUS 19 PANDEMIC: WHAT DO TUNISIAN RHEUMATOLOGISTS THINK?

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Background: Concerns over the safety of non-steroidal anti-inflammatory drugs (NSAIDs) use during severe acute respiratory syndrome associated with coronavirus 19 disease (covid-19) have raised. NSAIDs are one of the most commonly prescribed and used pain medications for acute and chronic rheumatic diseases such as spondyloarthritis (SpA) and osteoarthritis.

Objectives: This study aimed to assess the impact of covid-19 pandemic on NSAIDs prescription.

Methods: A cross-sectional web survey was disseminated to all Tunisian rheumatologists through a mailing system and social media. The French version was accessible on Google form. It included close-ended questions about the prescription of NSAIDs during covid-19 pandemic. Participation was anonymous. Data collection and analysis was performed between January the first and January 30, 2021.

Results: Among one hundred and thirty Tunisian rheumatologists, thirty responded to the online questionnaire. Ninety percent of participants were women. The mean age of rheumatologists was 34 years [25-57]. The duration of