

# Seroprevalence of SARS-CoV-2 in treatment naïve patients of rheumatological diseases



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Dear Sir,

COVID-19 is of paramount concern in the rheumatology community. As per current consensus, patients of rheumatological diseases (RDs) are at higher risk of SARS-CoV-2 infection than the general population (high agreement but very low grade of evidence);<sup>1</sup> however, contradictory reports are available regarding its seroprevalence and association with severity and mortality.<sup>1-3</sup> However, these inferences are mainly based on patients who have long-standing RDs and on various therapies. Then what would happen to those who are treatment-naïve, mildly symptomatic, or carrying this disease unknowingly in the community during this pandemic? To explore this aspect, we screened blood samples of clinically suspected patients of autoimmune diseases (ADs) for COVID-19 IgG antibody during the pandemic in the pre-vaccination period. Based on clinical profile, antinuclear antibody (ANA), antineutrophilic cytoplasmic antibody (ANCA), and myositis-associated autoantibodies were tested.

Out of 268 clinically suspected cases of RDs, 131 samples were positive for autoantibodies: RD group (114 ANA+08 myositis associated antibody+09 ANCA), and the rest 137 were negative (non-RD group). Out of these, three samples each from RD (3/131; 2.29%) and non-RD group (3/137; 2.17%) turned out to be positive for COVID-19 IgG antibody (EUROIMMUN, Germany), suggesting no increased prevalence of COVID-19 in patients of the RD group (OR=1.046, 95% CI: 0.145–7.53, P=0.9645). Among the RD group, two patients were finally diagnosed with systemic lupus erythematosus (SLE); however, others did not turn up again to the hospital to comment on the final diagnosis. None of these COVID-19 positive patients had any known comorbidities or RD-related treatment. These positive patients from both groups had almost similar mild-to-moderate COVID-19 disease courses with a favorable outcome.

A meta-analysis found a marginal association of ADs with increased risk of severity and mortality of COVID-19 disease (Risk of severity: OR=1.21, 95% CI: 0.58–2.5, P=0.79; Risk of mortality: OR=1.31, 95% CI: 0.33–5.2, P=0.95); however, the difference was not significant.<sup>2</sup> Studies have documented COVID-19 frequency of 2.4%

(4/165) among SLE patients with severe cases mostly in coexisting comorbidities.<sup>3,4</sup> Even recent consensus has suggested older age, presence of comorbidities, and use of prednisolone  $\geq 10$  as a risk factor for poor outcome in these two coexisting diseases.<sup>1,3</sup> Unlike the previous reports, the present study highlighted the susceptibility of treatment naïve cases of RDs for COVID-19. The RD group either has an almost similar SARS-CoV-2 prevalence as the non-RD group (2.29% vs. 2.17%) or even lower than the general population (2.29% vs. 7%).<sup>5</sup>

In conclusion, RD itself does not seem to be a risk factor for SARS-CoV-2 infection, even in treatment naïve patients; however, disease outcome may depend on various coexisting factors/comorbidities. Inter-talk between SARS-CoV-2 and RDs yet to be explored.

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## COMPLIANCE WITH ETHICAL STANDARDS

Study approved by the Institute Ethical Committee (INT/IEC/2020/Spl-998). The Declaration of Helsinki has been followed as per recommendations.

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**MK**- Conceptualization, Study Design, Data Analysis, Writing. Drafting the manuscript, Final approval of the version and accountability for all aspects of the work; **AS**- Clinical data collection and analysis, Literature and Critical review, Final approval of the version, and accountability for all aspects of the work; **RWM**- Conceptualization, Data collection, and Interpretation, Literature review, Critical review, Final approval of the version and accountability for all aspects of the work.

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