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Are patients with systemic lupus erythematosus at increased risk of severe COVID-19?

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Ethics board approval: the current analysis is part of a project to collect observational data from rheumatological patients followed at the ASST Gaetano Pini-CTO. The project was approved by the Ethics Committee of the Gaetano Pini Institute with approval number 141/2010. All included patients have signed an informed consent to participate in the data collection.

Dear Editor,

We thank So for the interest in our letter and for sharing the results about COVID-19 in patients with systemic lupus erythematosus (SLE) in Hong Kong (1).

We agree that the quantification of the risk of infection with severe acute respiratory coronaviruses-2 (SARS-CoV-2) in SLE patients is a major concern. This is even more true in light of the recently published data from Mathian and colleagues (2), who analyzed the course of CoronaVirus Disease 2019 (COVID-19) in a case series of 17 SLE patients. Of these, 13 (76%) patients developed interstitial pneumonia, complicated by respiratory failure in 11 (65%) and acute respiratory distress syndrome in 5 (29%). Moreover, 3 patients suffered from acute renal failure, with two patients requiring haemodialysis. The results of this analysis first demonstrated that the clinical course of COVID-19 in SLE patients seems to be particularly unfavorable and facilitated by multi-organ involvement and the several comorbidities often complicating this complex autoimmune disease. Because of this evidence, it becomes even more crucial to define whether patients with SLE are burdened with an increased risk of contracting COVID-19 in order to efficiently establish a prophylaxis program. Another still critical point is the definition of the role of chloroquine and hydroxychloroquine in the prevention and treatment of SARS-CoV-2 infection. In fact, after the *in vitro* demonstration of antimalarials ability to interfere with the endocytosis of the virus within the target cells and the first favorable *in vivo* results that led to their inclusion in COVID-19 management protocols worldwide (3), the most recent clinical studies have provided controversial results that leave many shadows on the real efficacy and safety profile of these drugs used for this indication (4). The data we recently

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published on the frequency of COVID-19 in connective tissue diseases (5), investigated through an exploratory survey to evaluate the incidence and course of COVID-19, included a portion of patients with SLE, which has further increased over time as our data collection progressed. In the most recent update, the group under review included 65 SLE patients, none of whom received a diagnosis of confirmed COVID-19 (6). Conversely, in a cohort of 165 SLE patients investigated by telemedicine in another rheumatology unit in Lombardy, 4 patients were diagnosed with COVID-19 confirmed by swab and 8 with highly suspicious COVID-19 (at least three out of four symptoms among fever, dyspnoea, cough and dysgeusia/anosmia plus established contact with a COVID-19 patient, no swab performed) (7). However, these study populations are still too limited in number to draw definitive conclusions, and larger cohort studies are certainly warranted in order to address the issue. With this in mind, the COVID-19 Global Rheumatology Alliance recently launched a worldwide register for patients with rheumatic diseases with COVID-19, which may decisively contribute with additional findings. Preliminary data recently published on 110 patients also included 19 SLE cases, confirming that the infection can certainly affect this type of patients as well (8).

In conclusion, it is very likely that patients with SLE are exposed to at least the same risk as the general population of acquiring COVID-19, which however generally shows a more unfavorable clinical course.

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