

# Letter to the Editor

## The first case of systemic lupus erythematosus (SLE) triggered by COVID-19 infection

Dear Editor,

Severe acute respiratory syndrome coronavirus 2 (SARS CoV 2) is a novel viral agent that has caused coronavirus disease 2019 (COVID 19). We have read the recent article by Bonometti et al<sup>1</sup> entitled "The first case of systemic lupus erythematosus (SLE) triggered by COVID-19 infection". They have reported a case of SLE in an 85-year-old woman who had a history of COVID-19 infection. They concluded that the systemic lupus erythematosus is one of the possible chronic rheumatologic diseases triggered by COVID-19. Based on the recent studies, viruses such as Epstein-Barr virus (EBV), cytomegalovirus, parvovirus B19 and retroviruses are the common viral candidates linked to SLE and maybe have a possible role in the pathogenesis of the disease<sup>2</sup>. Recent studies have shown some clinical situations caused by chronic viral infections in patients with SLE. The researchers reported cases of SLE reactivated in HIV and HCV patients after antiviral therapy. In addition, acute viral infections, such as parvovirus B19 and EBV can mimic lupus, trigger lupus, or trigger SLE flares<sup>3</sup>. Bonometti et al<sup>1</sup> should have evaluated the patient for other viral infections, especially EBV, but they did not. Therefore, they cannot conclude that SARS CoV 2 alone has definitely triggered SLE. If they had evaluated the presence of antibodies against the noted viruses, they could more strongly link the coronavirus to lupus. A severe immune activation in response to SARS-CoV-2 infection has been seen in some patients infected with COVID-19 that resulted in an acute respiratory distress syndrome, and a cytokine storm. SARS-CoV-2 increases interferon gamma, tumor necrosis factor- $\alpha$ , Macrophage inflammatory protein-1 alpha, IL-2, IL-6, IL-7, IL-10, in patients, that show a form of secondary hemophagocytic lymphohistiocytosis or macrophage activation syndrome (sHLH/MAS). Previous studies<sup>4</sup> reported HLH in the background of SLE. Acute infection with coronavirus may produce autoantibodies, such as anti-CCP antibodies and antinuclear antibodies. Future reports can support or refute this hypothesis.

### Conflict of interest

The Authors declare that they have no conflict of interests.

### References

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