

Incidence of COVID-19 in an Italian cohort of patients with systemic lupus erythematosus: an observational survey

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The current uncontrolled spread of the new Coronavirus 2 (SARS-CoV-2) disease 2019 (COVID-19) is a source of concern for the management of patients suffering from systemic autoimmune diseases, such as patients with systemic lupus erythematosus (SLE). SLE itself is intrinsically characterised by an increased infectious risk due to a general impairment of the immune system, while the use of immunosuppressive drugs and corticosteroids aggravates such risk. However, on the other hand, some anti-rheumatic drugs are under investigation as potential treatment options for the management of COVID-19. In this setting, hydroxychloroquine (HCQ), an antimalarial drug that is currently a mainstay of the standard-of-care treatment for SLE, seems to have antiviral activity *in vitro*, and is included in the protocol for treatment of SARS-CoV-2 infection (1-3).

Between May 1 and May 10, 2020, we conducted a survey by telephone to investigate the incidence of COVID-19 in patients with SLE followed at the Rheumatology Unit of the University of Campania, Italy. The survey included demographics, the incidence of COVID-19 confirmed by nasopharyngeal swab and the frequency of respiratory symptoms. The overall cohort included 351 adult patients. Data were collected from 268 patients who accepted to take part of the study (Table I). 79 were contacted by phone, but they declined to participate in the survey. Four patients died before December 2019.

Out of them, the majority were females (249), with a median age of 47 years. Approximately 72% of patients were treated with HCQ (5 mg/kg/day), 37% with conventional synthetic disease-modifying drugs (47 mycophenolate, 37 azathioprine, 12 methotrexate, 4 cyclosporine, 1 colchicine), 15 patients were receiving biological agents (13 belimumab, 1 rituximab, and 1 abatacept), and more than half of the cohort were also taking corticosteroids (median dose 5 mg daily). The only patient who underwent a swab was an 87-year-old woman with fatigue and myalgia, but it resulted negative. A further 50 patients reported respiratory symptoms consistent with a viral infection, but they did not have access to the swab. These patients had a mild clinical course with a rapid resolution of symptoms. Serological test was performed in 2 patients with respiratory symptoms and was negative. No patients were admitted to hospital care and none reported a viral pneumonia. Among the group on HCQ therapy 30 patients reported respiratory symptoms (15%) versus 13 patients who were not taking HCQ (17%). Moreover, 18 (36%) were on disease-modifying drugs or belimumab therapy and 29 patients (50%) were taking steroids. The median dose of steroids was 5mg/day in this group. Even HCQ seems to not have a prophylactic role in the prevention of COVID-19 infection, as it has recently been shown by a randomised controlled trial (4), such conclusion cannot be drawn from this study which identified no confirmed cases of COVID-19.

Table I. Demographics and clinical characteristics of 268 patients with SLE.

Women, n	249 (93%)
Age, years, median (range)	47 (19-87)
Prior ILD, n	7 (2%)
Smokers, n	70 (28%)
Hydroxychloroquine therapy, n	192 (72%)
Steroids, n	156 (58%)
Prednisone equivalent dose, median (range)	5 (2.5-25)
DMARDs	100 (37%)
Belimumab	13 (5%)
Angiotensin-converting enzyme (ACE) inhibitors	68 (25%)
Angiotensin II receptor blockers (ARBs)	37 (14%)
Fever	24 (9%)
Cough	21 (8%)
Shortness of breath	6 (2%)
Sore throat	7 (3%)
Rhinorrhoea	13 (5%)
Headache	2 (1%)
Anosmia	
Myalgia	6 (2%)
Gastrointestinal symptoms	8 (3%)
Pneumonia	0
Admission to hospital	0

On April 7th, 2020, 135,000 COVID-19

cases were notified in Italy, with almost 17,000 deaths (4). Based on the surveys conducted by the Campania Region, 3,769 people have been diagnosed with Sars-CoV 2 through direct research of the Corona-virus in our region. In our lupus cohort, we did not identify any confirmed COVID-19 cases among the 269 respondents to our phone survey. No hospital admission or no confirmed diagnosis of viral pneumonia was detected.

In conclusion, although we cannot exclude asymptomatic infections, the likely low incidence of COVID-19 in our SLE cohort could encourage the maintenance of ongoing rheumatological therapy. However, these are preliminary results that can only be regarded as tentative to help clinicians until replicated in larger cohorts.

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