Impact of COVID-19 pandemic on patients with large-vessel vasculitis in Italy: a monocentric survey

Severe infections represent one of the major complications of immunosuppressive therapy.[1] Great concern among rheumatologists has consequently raised by the outbreak of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) disease 2019 (COVID-19).[2 3] Italy has represented the European epicentre of this global pandemic, with more than 140 000 confirmed cases as of 11 April 2020.[4]

We evaluated the impact of SARS-CoV-2 infection among patients with large-vessel vasculitis (LVV) followed up at our LVV-Clinic in Milan, Lombardy, the Italian region with the highest rate of SARS-CoV-2 infections.[5] A phone survey was conducted among these patients between 2 and 10 April 2020, 6 weeks after the COVID-19 outbreak in Italy. The survey consisted of the following questions: (1) Have you been diagnosed with COVID-19? (2) Since the beginning of COVID-19 outbreak, have you experienced one of the following symptoms: sore throat, non-productive cough, fever >37.5°C, reduced smelling or tasting, flu-like symptoms? (3) Have you been in contact with a COVID-19 patient? (4) Have you regularly been taking your LVV medications? (5) Have you experienced a relapse of your disease? Patients reporting a diagnosis

Table 1 Clinical features of patients with giant cell arteritis and Takayasu arteritis followed up at our Large-Vessel Vasculitis Clinic who completed the COVID-19 survey

	Takayasu arteritis (n=67)	Giant cell arteritis (n=95)
Demography		
Age, years (mean±SD)	49±13	73±12
Female, n (%)	58 (88)	60 (63)
Comorbidities		
Smoking, n (%)	8 (12)	8 (8)
Hypertension, n (%)	38 (58)	52 (55)
Diabetes mellitus, n (%)	4 (6)	11 (12)
Cardiovascular disease, n (%)	11 (17)	4 (4)
Chronic kidney disease, n (%)	1 (2)	4 (4)
Cancer, n (%)	3 (5)	4 (4)
Disease features		
Duration, months (mean±SD)	142±109	31±32
Remission at last visit, n (%)	59 (89)	85 (90)
Glucocorticoids, n (%)	44 (67%)	57 (60%)
Prednisolone dose, mg (mean±SD)	5±7	5±7
csDMARDs, n (%)		
Methotrexate, n (%)	34 (52)	17 (18)
Leflunomide, n (%)	4 (6)	1 (1)
Mycophenolate Mofetil, n (%)	5 (8)	0
Azathioprine, n (%)	5 (8)	0
Sirolimus, n (%)	3 (5)	0
bDMARDs/tDMARDs, n (%)		
Tocilizumab, n (%)	7 (11)	46 (48)
Infliximab, n (%)	25 (38)	–
Adalimumab, n (%)	6 (9)	–
Golimumab, n (%)	2 (3)	–
Tofacitinib, n (%)	3 (5)	–
cs-/bDMARD combination, n (%)	4 (4)	4 (4)

bDMARD, biological disease-modifying antirheumatic drug; csDMARD, conventional synthetic disease-modifying antirheumatic drug; tsDMARD, targeted synthetic disease-modifying antirheumatic drug.

Table 2 Clinical features of patients with diagnosis of COVID-19 confirmed by rhinopharyngeal swab and chest X-ray

	Patient 1	Patient 2	Patient 3	Patient 4
Diagnosis	Takayasu arteritis	Takayasu arteritis	Cranial GCA	Cranial GCA
Age, years	38	33	79	79
Sex	Female	Female	Male	Male
Comorbidities	Hypertension	Smoking	Hypertension	CAD, CKD
Disease status at last visit	Remission	Remission	Remission	Remission
Disease duration, months	99	111	5	13
Prednisone, mg	5	5	17.5	7.5
csDMARD (duration, months)	MTX 20 mg (82)	MTX 20 mg (105)	–	–
bDMARD (duration, months)	IFX 10 mg/kg (75)	ADA 40 mg (27)	–	–
Contact with COVID-19+	No	Yes	Yes	No
Rhinopharyngeal swab	Positive	Positive	Positive	Positive
Chest X-ray findings	Pneumonia	Pneumonia	Pneumonia	Pneumonia
Chest CT findings	*Not done*	*Not done*	Interstitial pneumonia	Interstitial pneumonia
Hospital admission	No	No	Yes*	Yes
CRP levels (mg/L)				
On admission	–	–	42 mg/L	51 mg/L
At discharge	–	–	8 mg/L	11 mg/L
Therapy	None	None	HCQ 400 mg daily	HCQ 400 mg daily
Length of hospitalisation	–	–	8 days	19 days
Outcome	Full recovery	Full recovery	Full recovery	Full recovery

*COVID-19 developed during hospital admission for a different medical reason.
bDMARD, biological disease-modifying antirheumatic drug; CAD, coronary artery disease; CKD, chronic kidney disease; CRP, C-reactive protein; csDMARD, conventional synthetic disease-modifying antirheumatic drug; GCA, giant cell arteritis; HCQ, hydroxychloroquine; IFX, infliximab; MTX, methotrexate.

of COVID-19 were further investigated. Patients with LVV were classified according to their diagnosis (giant cell arteritis (GCA); Takayasu arteritis (TA)). Disease status at the latest available follow-up visit, chronic therapy, main comorbidities and region of residence were recorded. All patients provided their consent for the use of their demographic and clinical data.

A total of 162 patients (67 patients with TA, 95 patients with GCA out of our active cohort of 97 patients with TA, 151 patients with GCA) could be reached and consented to participate to the survey. Table 1 shows details about clinical features of the responders. Two-thirds of patients were from Lombardy. None of them had an LVV clinical relapse. Due to the national lockdown, six patients with TA could not reach our center for their programmed infliximab infusions: two were switched to adalimumab, two were referred to local hospitals and in two cases infusions were temporarily postponed due to clinical stability.

Eight patients with TA and four patients with GCA reported at least two of the symptoms as detailed in Question 2, without being diagnosed with COVID-19 nor requiring hospital admission. Five patients with TA and seven patients with GCA had a close contact with at least one COVID-19 diagnosed person. Two patients with TA (3%) and two patients with GCA (2%) among the responders received a microbiological diagnosis of SARS-CoV-2 infection. Both patients with TA did not require hospital admission and had a full recovery at home. One patient with GCA (patient 3) was hospitalised due to iatrogenic hepatotoxicity. During his admission, he developed fever and cough, so he underwent a chest CT, which showed bilateral ground-glass opacities. A subsequent nasopharyngeal swab confirmed SARS-CoV-2 infection. The other patient with GCA was admitted to the hospital after a 7-day history of fever and dyspnoea. None of them required oxygen support. They both had a full recovery and were eventually discharged. See table 2 for more details about our patients with COVID-19 LVV.

Due to the limited number of patients included, our survey does not allow to draw definitive conclusions about the epidemiology and prognosis of COVID-19 among patients with LVV. National lockdown has only marginally impacted on intravenous therapy and ad hoc measures (switching to subcutaneous therapy, local referral) were taken for those who could not postpone their treatments. In our patients, apparently, background immunosuppression did not negatively impact on COVID-19 course, as all patients experienced full recovery, including the two elderly patients with GCA that required hospitalisation. European League Against Rheumatism recently pronounced against routinely stopping or reducing medications in patients with rheumatic diseases, unless new medical contraindications appear.[6] Our data support this guidance and shows that, in our cohort, immunosuppression was not associated to negative outcomes.

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