Conclusion: People living with RMD who are part of a real-world US registry are willing to participate in an online mindfulness training program study, but may require additional support to remain engaged and adherent throughout the program and to participate to study conclusion. Participation in a mindfulness training program, whether full-length or brief, appears to improve symptoms of emotional distress among people with RMD.

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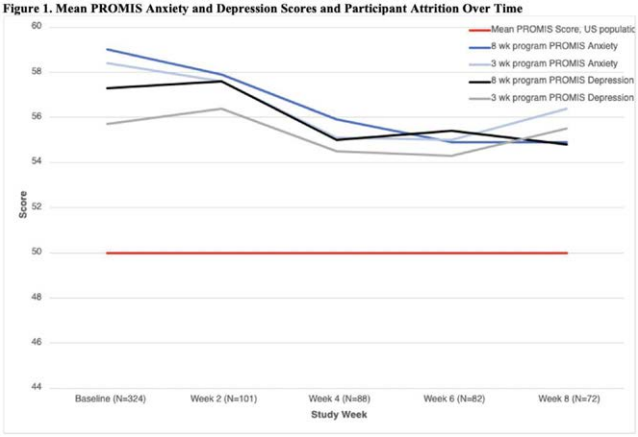

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New Developments in COVID-Research

OP0281 EXCESS GIANT CELL ARTERITIS CASES ARE ASSOCIATED WITH PEAKS IN COVID-19 PREVALENCE

B. Mulhearn[1,2], J. Ellis[1], S. Skeoch[1], J. Pauling[1,2], S. Tansley[1,2]. [1]*Royal United Hospital, Royal National Hospital For Rheumatic Diseases, Bath, United Kingdom*; [2]*University of Bath, Pharmacy and Pharmacology, Bath, United Kingdom*

Background: Immediately following the first wave of the COVID-19 pandemic, the number of giant cell arteritis (GCA) diagnoses noticeably increased at the Royal National Hospital for Rheumatic Diseases in Bath, UK. Furthermore, there was an increase in the proportion of patients with visual complications [1]. The finding supports the viral hypothesis of GCA aetiopathogenesis as previously described [2]. This not only has ramifications for understanding the underlying disease mechanisms in GCA but also has implications for the provision of local GCA services which may have already be affected by the pandemic.

Objectives: The objective of the study was to estimate the incidence of giant cell arteritis during the COVID-19 pandemic years of 2020 – 2021 and compare it to 2019 data. Given that there have now been two distinct peaks of COVID-19 as reflected by hospital admissions of COVID-19-positive patients this has allowed us to investigate if there is a temporal relationship between the prevalence of COVID-19 and the incidence of GCA.

Methods: The incidence of GCA was calculated by assessing emailed referrals to the GCA service and the hospital electronic medical records to identity positive cases from 2019 to the current date. Local COVID-19 prevalence was estimated by measuring the number of hospital beds taken up by COVID-19 positive patients, available publicly in a UK Government COVID-19 dataset [3].

Results: There were 61 (95% Poisson distribution confidence interval [CI] 47 - 78) probable or definite GCA diagnoses made in 2020 compared to 28 (CI 19 – 40) in 2019 (Figure 1). This is an excess of 33 cases in 2020, or an increase in 118%. Given that 41% of the hospital's catchment population is over 50, this equates to an annual incidence rate of 13.7 per 100,000 in 2019 and 29.8 per 100,000 in 2020. This compares to a previously estimated regional incidence rate of 21.6 per 100,000 for the South West of the UK [4].

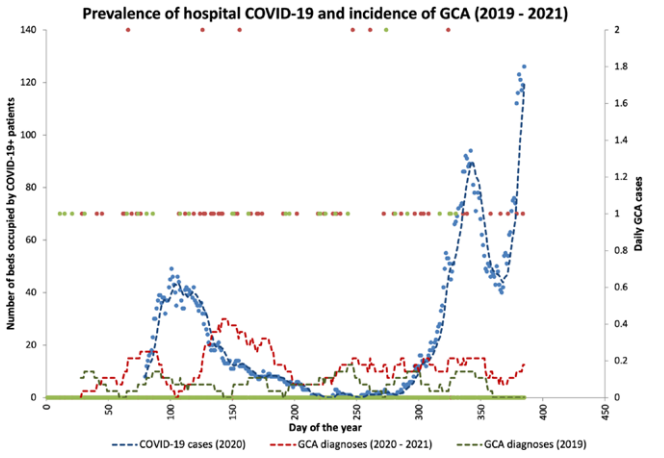

Figure 1. Prevalence of hospital COVID-19 and incidence of GCA (2019 – 2021). Graph showing the number of hospital beds occupied by COVID-19-positive patients in 2020 – 2021 (blue circles), number of daily GCA diagnoses in 2020 – 2021 (red circles), and previous GCA diagnoses in 2019 (green circles). The broken lines represent moving averages with a period of 7 days for COVID-19 cases and 28 days for GCA diagnoses.

A peak in COVID-19-positive inpatients was seen on 10th April 2020 with a corresponding peak of GCA diagnoses on 29th May 2020, giving a lag period of approximately 6 weeks between these peaks (Figure 1).

Conclusion: The incidence of GCA in Bath was significantly increased in 2020 compared to 2019. This may be the result of the widespread infection of the local population with the COVID-19 virus as a precipitating factor. Possible mechanisms include, but are not limited to, endothelial disruption by the virus, immune system priming towards T helper cell type 1 (Th1) cellular immunity and/or activation of the monocyte-macrophage system. More work is currently underway to assess the causal relationship between the two diseases.

There was a lag period of 6 weeks between the peak during the first wave of the pandemic and the rise in GCA cases. We shall be closely monitoring the number of referrals that follow the current wave of the pandemic.

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OP0282 RITUXIMAB ASSOCIATED WITH SEVERE COVID-19 AMONG PATIENTS WITH INFLAMMATORY ARTHRITIDES: A 1-YEAR MULTICENTER STUDY IN 1116 SUCCESSIVE PATIENTS RECEIVING BIOLOGIC AGENTS

R. Felten[1], P. M. Duret[2], E. Bauer[3], M. Ardizzone[4], H. J. Djossou[5], J. H. Salmon[6], C. Fabre[7], J. Walther[7], I. Chary Valckenaere[3], M. Geoffroy[6], L. Messer[2], F. Berenbaum[5], M. Soubrier[8], J. Sellam[5], J. E. Gottenberg[1]on behalf of BIOCOV Study Group. [1]*Hôpitaux Universitaires de Strasbourg, Service de Rhumatologie, Centre National de Référence des Maladies Auto-immunes Systémiques Rares Est Sud-Ouest (RESO), Strasbourg, France*; [2]*Hospices Civils de Colmar, Hôpital Pasteur, Service Rhumatologie, Colmar, France*; [3]*Hôpitaux Universitaires de Nancy, Service de Rhumatologie, Nancy, France*; [4]*Hôpital Emile MULLER de Mulhouse, Service de Rhumatologie, Mulhouse,*

France; [5]*Hôpital Saint Antoine, APHP, Service de Rhumatologie, Paris, France*; [6] *Hôpitaux Universitaires Reims, Service de Rhumatologie, Reims, France*; [7]*Hôpitaux Universitaires de Strasbourg, Service de Pharmacie-Stérilisation, Strasbourg, France*; [8]*Hôpitaux Universitaires de Clermont-Ferrand, Service de Rhumatologie, Clermont-Ferrand, France*

Background: At a time when vaccines are being prioritized for individuals most at risk, there is currently no clear evidence that risk of SARS-CoV-2 infection is higher for patients with than without inflammatory arthritides (IA). Biologic use was not associated with worse COVID-19 outcomes for yet but the case of rituximab (RTX) remains an issue, given its immunological long term effect, the role of humoral response against SARS-CoV-2 and its indirect effect on T-cell response. A potential association between rituximab and worse COVID-19 outcomes was raised by case reports and retrospective, declarative studies (with few data on the total number of patients exposed).

Objectives: To address differently the issue of the risk of COVID-19 related to RTX and limit biases, we examined the occurrence of severe COVID-19 in all patients receiving intravenous biologic agents at day-hospitals during the pandemic in France.

Methods: From 1st September 2019 to 1st January 2021, we analyzed patients with IA prospectively treated with intravenous biologic agents (RTX, abatacept, infliximab or tocilizumab) in 7 clinical centers in France. We obtained the list of patients receiving intravenous biologic agents in each center from the pharmacist of the hospitals. Therefore, all consecutive patients receiving 1 of the 4 drugs at the time of the study were included in each center. Patients with no follow-up after September 2020 were systematically contacted by phone. The occurrence of a severe COVID -19 (i.e. resulting in death, hospitalization or increase in length of hospitalization related to COVID-19) was the primary outcome criteria.

Results: In total, 1116 patients receiving intravenous biologic agents were included: 449 with infliximab, 392 RTX, 170 tocilizumab and 105 abatacept. From 1st September 2019, the median follow-up time was 15 months (interquartile range 14-16). In total, 10 cases of severe COVID-19 occurred, 9 treated with RTX and 1 with infliximab (supplementary Table 1). Four deaths occurred in our cohort during follow-up but none was related to COVID-19 (1 patient treated by tocilizumab, 1 by RTX and 2 by infliximab). In univariate analysis, the proportion of severe COVID-19 was significantly higher for patients receiving RTX than other biologic agents (9/392 vs 1/724, p=0.0003, OR [95%CI] 17.0 [2.1-134.6]). To take into account potential confounders, we performed multivariate analysis accounting for baseline parameters that differed between RTX and other biologic groups. RTX remained significantly associated with risk of severe COVID-19 (p=0.019) (Table 1).

Patient characteristics	Rituximab (n= 392)	Other bDMARDs (n= 724)	Univariate analysis, p-value	Multivariate analysis, p-value
Median age (years), — [IQR]	64 [56-71]	57.3 [47.0-67.0]	**< 0.0001**	0.51
Female — n (%)	285 (72.7)	426 (58.8)	**< 0.0001**	0.58
IA diagnosis			**< 0.0001**	0.12
Median follow-up from 1st September to last news	14 [13-15]	15 [14-16]	**< 0.0001**	0.86
Confirmed severe COVID-19 cases —n (%)	9 (2.3)	1 (0.1)	**0.0003**	**0.019**
Comorbidities** (history of) — n (%)				
Cardiovascular disease	60 (15.4)	167 (23.1)	**0.0025**	0.77
Chronic lung disease,	92 (23.5)	84 (11.6)	**0.0001**	0.88
Median BMI (kg/m^2) — [IQR]	25.8 [23.2-29.4]	27.3 [23.4-31.2]	**0.015**	0.80
Treatments — n (%)				
Methotrexate	179 (45.8)	322 (44.5)	0.71	
Leflunomide	41 (10.5)	39 (5.4)	**0.0023**	0.43
Hydroxychloroquine	35 (8.9)	24 (3.3)	**0.0001**	0.15
Glucocorticoids	127 (41.8)	100 (19.4)	**< 0.0001**	0.36
Median dose (mg/day) — [IQR]	1 [0-5]	0 [0-0]	**< 0.0001**	

No significant difference in terms of baseline gammaglobulins (p=0.46) or number of previous RTX infusions (p=0.57) was observed among patients receiving RTX with or without a severe COVID-19.

Conclusion: The present results highly indicate increased risk of severe COVID-19 with RTX. Among patients with inflammatory arthritides, those receiving RTX should be prioritized for vaccination against SARS-CoV-2, sufficiently long before infusion/reinfusion and the immunization checked, or an alternative targeted therapy proposed.

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OP0283 DOES TNF-INHIBITION DECREASE THE RISK OF SEVERE COVID-19 IN RMD-PATIENTS?

R. Hasseli[1], B. F. Hoyer[2], A. Krause[3], H. M. Lorenz[4], A. Pfeil[5], A. Regierer[6], J. Richter[7], T. Schmeiser[8], A. Strangfeld[6], H. Schulze-Koops[9], R. Voll[10], C. Specker[11], U. Müller-Ladner[1]. [1]*Justus-Liebig-University Giessen, Campus Kerckhoff, Department of Rheumatology and Clinical Immunology, Bad Nauheim, Germany*; [2]*University Hospital Schleswig-Holstein, Campus Kiel, Department of Rheumatology and Clinical Immunology, Clinic for Internal Medicine I, Kiel, Germany*; [3]*Immanuel Hospital, Berlin, Department of Rheumatology, Clinical Immunology and Osteology, Berlin, Germany*; [4]*University Hospital Heidelberg, Division of Rheumatology, Department of Medicine V, Heidelberg, Germany*; [5]*University Hospital Jena, Department of Internal Medicine III, Jena, Germany*; [6]*German Rheumatism Research Centre, Berlin, Epidemiology Unit, Berlin, Germany*; [7]*Heinrich-Heine-University Duesseldorf, Medical Faculty, Duesseldorf, Department of Rheumatology and Hiller Research Unit, Duesseldorf, Germany*; [8]*Private Practice Cologne, Rheumatologie im Veedel, Cologne, Germany*; [9]*University of Munich, Division of Rheumatology and Clinical Immunology, Department of Internal Medicine IV, Munich, Germany*; [10]*University of Freiburg, Faculty of Medicine, Freiburg, Department of Rheumatology and Clinical Immunology, Freiburg, Germany*; [11]*Kliniken Essen-Mitte, Essen, Department of Rheumatology and Clinical Immunology, Essen, Germany*

Background: Patients with rheumatic and musculoskeletal diseases (RMD) might have an increased risk for infection due to their immunomodulatory treatment, secondary to their disease and comorbidities. Recent studies suggest a decreased risk of severe COVID-19 in RMD-patients treated with biologics.

Objectives: The aim of this study was to assess courses of RMD patients treated with TNF-inhibitors (TNF-I) included in the German COVID-19 registry.

Methods: In the German physician-reported COVID-19-RMD registry, patients with an RMD and confirmed SARS-CoV-2-infection were documented (data entered between March 30, 2020 and January 30, 2021). We analysed TNF-I treated patients, their course and outcome of the infection. Data were compared to RMD-patients treated with other immunomodulatory drugs (OID) than TNF-I.

Results: A total of 269 patients were treated with a TNF-I (57% female) compared to 874 patients who were treated with OID (68% female). Median age was 52 years (range: 19-87) in the TNF-I-group versus 58 years (range: 18-91) in the OID-group. Rheumatoid arthritis was the most common diagnosis (38% in TNF-I-group vs. 52% in the OID-group), followed by ankylosing spondylitis (32% vs. 6%), psoriatic arthritis (22% vs. 11%) and other RMD (9% vs. 31%). Adalimumab (35%) and etanercept (35%) were the most frequently used TNF-I (tab. 1). Glucocorticoids (GC) were used in 22% of TNF-I-treated patients and in 42% of the OID-group.

Under TNF-I, stable disease was reported prior to the SARS-CoV-2-infection in 53% of the patients (OID-group: 47%), followed by low disease activity in 35% (OID: 34%), moderate disease activity in 6% (OID: 12%) and high disease activity in 4% (OID: 3%). Most frequent comorbidities were arterial hypertension (29% under TNF-I vs. 35% under OID), diabetes (8% vs. 11%) and cardiovascular diseases (7% vs. 12%).

The most common reported COVID-19 symptoms were dry cough (57% vs. 55%), fever (53% vs. 61%) and fatigue (50% vs. 49%). Hospitalization due to SARS-CoV infection was required in only 12% of the TNF-I-treated cases vs. in 29% in the OID-group. Oxygen treatment was necessary in 5% of the patients under TNF-I compared to 22% under OID and invasive ventilation in 2% in the TNF-I-group compared to 6% under OID. Most notably, no fatal courses of COVID-19 were reported among the 269 RMD-patients treated with TNF-I versus 49 deaths in the 874 cases (5.6%) treated with OID. Focussing on the hospitalizated TNF-I patients, the rate of concomitant GC use (p<0.001) and higher disease activity (p=0.005) was significant higher (tab.1).

Conclusion: High or moderate RMD-disease activity is an important factor associated with severity of COVID-19 including mortality. In this large cohort RMD patients treated with TNF-I show a low hospitalisation rate and no fatal course. This is reassuring for patients and treating rheumatologists to use TNF-I to control RMD disease activity. The use of glucocorticoids and high disease activity seem to counteract possible protective effects of TNF-I.