regardless of the detection of any aPLs. These findings suggested that COVID-19 associated aPLs were irrelevant to thrombotic complications.

**Conclusion:** Thromboses were induced after the infection of SARS-CoV-2 only in the APS model. However, aPLs detected in COVID-19 patients have little impact on the development of thrombosis. SARS-CoV-2 infection might have a high risk of thrombosis, especially in APS patients, as shown in the case report (4). The discrepancy of its thrombogenic effects of aPLs might be explained by the low titer of the antibody or the diversity of antibody epitope. Further analyses are required to clarify the mechanisms of aPLs production and the development of thrombosis in COVID-19.

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**Disclosure of Interests:** Seiya Oba: None declared, Tadashi Hosoya Speakers bureau: Janssen Pharmaceutical K.K. Daiichi Sankyo Company, limited Asahi Kasei Corporation Ono pharmaceuticals Eisai Eli Lilly, Daiisuke Kawata: None declared, Wenshi Lee: None declared, Mari Kamiya: None declared, Yoji Kamiya: None declared, Hideyuki Iwai: None declared, Yuko Nukui: None declared, Shuji Tohda: None declared, Shinya Yasuda Speakers bureau: Abbvie, Asahi Kasei Pharma, Chugai Pharmaceutical, Eisai, Eli Lilly, GlaxoSmithKline, Mitsubishi Tanabe Pharma, Ono pharmaceutical, Pfizer., Consultant of: ImmunoForge, Grant/research support from: Abbvie, Asahi Kasei Pharma, Chugai Pharmaceutical, CSL Behring, Eisai, ImmunoForge, Mitsubishi Tanabe Pharma, Ono pharmaceutical.


**POS0198 COVID-19 OUTCOMES IN PATIENTS WITH RHEUMATOID ARTHRITIS: A REGISTRY-BASED COHORT ANALYSIS**

L Gupta,1,2 H. Pakhchanian,2 H. Khan,2 R. Raiker,2 M. Abbasi1, C. Deyoung1, S. Karde1, S. Ahmed,1, C. Kavadiachanda,2 P. Sen,1 R. Aggarwal1,3 Royal Wolverhampton Hospitals NHS Trust, Department of Rheumatology, Wolverhampton, United Kingdom; 1Sanjay Gandhi Postgraduate Institute of Medical Sciences, Department of Clinical Immunology and Rheumatology, Lucknow, India; 2George Washington Hospital School of Medicine & Health Sciences, Washington DC, United States of America; 3Dubai Medical College for Girls, - Duba, United Arab Emirates; 4West Virginia University School of Medicine, Morgantown, United States of America; 5Sidney Kimmel Medical College at Thomas Jefferson University, Philadelphia, United States of America; 6Istanbul University Faculty of Medicine, Department of Medical Ecology and Hydroclimatology, Istanbul, Turkey; 7Kalinga Institute of Medical Sciences, Department of Clinical Immunology and Rheumatology, Bhubaneswar, India; 8Jawaharlal Institute of Postgraduate Medical Education and Research, Department of Clinical Immunology, Puducherry, India; 9Maulana Azad Medical College, Undergraduate, New Delhi, India; 10University of Pittsburgh School of Medicine, Division of Rheumatology and Clinical Immunology, Pittsburgh, United States of America

**Background:** Dermatomyositis (DM) patients have fewer risks of COVID-19 infection compared to the general population, however, certain subgroups with DM have worse outcomes. Men, African Americans, those with interstitial lung disease, exhibited higher risks of severe COVID-19. DMARD and glucocorticoid use was associated with frequent hospitalisations and severe sepsis.

**Objectives:** Rheumatic diseases (RDs) like DM, are previously known to be vulnerable towards various types of infections due to its aggressive activity mandating high dose immunosuppressive therapy. The severity of COVID-19 in RDs is limited in literature due to the heterogeneous nature of the condition. Therefore, specific details on mortality is essential to navigate any precautions required in the treatment.

**Methods:** Retrospective data of individuals with DM and COVID-19 and the general population with COVID-19 between January 2020 to August 2020 was retrieved from the TriNetX database. A one-to-one matched COVID-19 positive control was selected using propensity score (PS) matching. We assessed COVID-19 outcomes such as mortality, hospitalisation, ICU admission, severe COVID-19, mechanical ventilation (MV), acute kidney injury (AKI), venous thromboembolism (VTE), ischemic stroke, acute respiratory distress syndrome (ARDS), renal replacement therapy (RRT) and sepsis. Subgroup analyses included gender, race, ILD, cancer patients, disease-modifying rheumatic drugs (DMARDs) use, and glucocorticoids (GC) use (Figure 1).

![Figure 1. Overview of study](https://example.com/figure1)

**Results:** We identified 5,574 DM patients with COVID-19, and 5,574 general population with COVID-19 (controls). DM with COVID-19 had a lower risk of mortality in comparison to controls [RR 0.76], hospitalisation [RR 0.8], severe COVID-19 [RR 0.76], AKI [RR 0.83], and sepsis [RR 0.73]. Males and African Americans were more likely to develop AKI [RR 1.35, 1.65], while African Americans had higher odds for severe COVID-19 [RR 1.62] and VTE [RR 1.54]. DM with ILD group also experienced higher odds for severe COVID-19 infection [RR 1.64] and VTE [RR 2.06] (Figure 1).

DM patients receiving DMARDs and glucocorticoids had higher odds for hospitalisation [RR 1.46, 2.12], and sepsis [RR 3.25] Subgroup analysis of neoplasms amongst DM patients with COVID-19 was inadequate for meaningful comparison (Figure 1).

**Conclusion:** DM patients are protected for certain aspects of COVID-19 disease, including severe COVID-19, hospitalization, and mortality. The African American race, male gender, ILD, DMARDS and glucocorticoid users, are associated with poor outcomes.

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**POS0199 DETECTION OF SARS COV-2 ANTIBODIES FOLLOWING VACCINATION IN PATIENTS WITH RHEUMATIC MUSCULOSKELETAL DISEASE (DECODIR) – AN INTERIM REPORT FROM A DANISH PROSPECTIVE COHORT STUDY**

C. Graversgaard,1 K. Schreiber,2,3 R. Petersen,1 H. Jakobsen,1 A. B. Bojesen,1 N. Steen Krogstrup,1 B. Glintborg,2,3 M. L. Hetland1,2,3 C. Hendricks2,3 University of Southern Denmark, University Hospital of Southern Denmark, Sonderborg, Denmark; 1University of Southern Denmark, Department of Regional Health Research, Sonderborg, Denmark; 2Guy’s and St Thomas’ NHS Foundation
Background: During the COVID-19 pandemic, it remains a major concern whether patients with rheumatic musculoskeletal disease treated with conventional (cs) or biologic (b) disease modifying drugs (DMARDs) exhibit an adequate immune response to the currently available SARS-CoV-2 vaccines. There remains an urgent need for more data on SARS-CoV-2 vaccine efficacy to inform healthcare providers on the efficiency of the applied vaccination, potential need of and period for booster and/or re-vaccination.

Objectives: To assess and compare the efficacy of the SARS-CoV-2 vaccines BNT162b2 vaccine (Pfizer/BioNTech) and mRNA-1273 vaccine (Moderna). The vaccines were administered as part of the Danish vaccine roll-out and offered each with two doses and approximately four weeks apart.

Patients’ SARS-CoV-2 IgG serum level was used as proxy to determine vaccination response.

Methods: We established the ‘Detection of SARS-CoV-2 antibodies in Danish Inflammatory Rheumatic Outpatients’ study (DECODIR) as a longitudinal prospective cohort study. Patients with rheumatoid arthritis (RA), spondyloarthropathies (SpA) or psoriatic arthritis (PsA) receiving their outpatient treatment and monitored in the Danish DANBIO registry at the Danish Hospital for Rheumatic Diseases (DG), Sonderborg were included (April - June 2021). Bloods, patient reported outcome measurements (PROMs), clinical data and treatment information (cs/bDMARD) were collected at baseline (prior to vaccination) and after six weeks and six months. SARS-CoV-2 IgG levels in serum were assessed by ELISA (ThermoFischer), and manufacturer’s cut-off (≥10 EliA U/mL) selected as definition of sufficient IgG response. Associations between antibody response, age, gender, disease (RA/PsA/SpA), treatment with no or cs/bDMARDs and disease activity were tested using proportional odds regression and bootstrapped tests of medians. Results were reported using mean, median (IQR) and bootstrapped 95% confidence interval (CI) of the median.

Results: A total of 243 patients were included at baseline and after six weeks; at six months follow-up data were available for 233 patients.

Conclusion: IgG levels decreased markedly six months after the initial double dose regimen. Patients treated with a combination of cs/bDMARD or oral prednisolone are at higher risk of inadequate vaccine response as measured by IgG level.

Our results support the decision for the need of a third booster vaccine in patients with inflammatory rheumatic diseases, especially in the case of cs/bDMARD combination treatment and prednisolone. The data may indicate a need for further revaccination in these patients.

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Figure 1. IgG-level stratified by treatment

Similar to week 6, lowest response rates were found in patients treated with prednisolone or combination of csDMARD and bDMARD. After 6 months, the proportional odds model revealed significantly lower median IgG antibody level in patients who received Pfizer compared to Moderna (median 15 EliA U/mL (95%CI: 13-18) vs 44.5 EliA U/mL (95%CI: 36-83) (p<0.001).