P057 WHAT IS THE COURSE OF SARS-COV-2 INFECTION IN PEOPLE WITH AUTOIMMUNE CONDITIONS ON IMMUNOMODULATORS IN COMPARISON TO PEOPLE WITHOUT AUTOIMMUNE DISEASE?

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Background/Aims

The pathogenesis and outcomes of COVID-19 in patients with autoimmune disease remains poorly understood. We aimed to evaluate clinical features and antibody mediated immunity against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in subjects with autoimmune disease, compared to those without.

Methods

Patients who developed COVID-19 were identified through the audit department/clinician identification. In total, there were 48 subjects with autoimmune disease and confirmed COVID-19. Of these patients, 6 had sadly died. In recruited patients, clinical data regarding COVID-19 symptoms, treatment and outcomes were collected. Blood was taken for quantitative serology testing against SARS-CoV-2 using the Mologic test kit. A binary logistic regression was used to compare serology results in subjects with and without autoimmune diagnoses.

Results

Our sample included 103 participants. 26 subjects with autoimmune disease and confirmed COVID-19 were recruited, the most common diagnoses being rheumatoid arthritis (27%), psoriatic arthritis (19%) and inflammatory bowel disease (15%). 21 of 28 participants were on immunomodulatory medications including 16 on conventional synthetic disease modifying anti-rheumatic drugs (DMARDs), four on biologic DMARDs and one on tacrolimus. We age- and gender-matched these subjects to 26 without autoimmune disease with confirmed SARS-CoV-2 infection. 17 further subjects reported viral-symptoms during the COVID-19 pandemic but had negative serology. 30 subjects had rheumatic conditions but denied symptoms suggestive of COVID-19. 4 of the asymptomatic patients tested positive for COVID-19 on serology. 23 stored serum samples, obtained before 2019, were all negative for antibodies against SARS-CoV-2. In patients with confirmed COVID-19, clinical features and serology were compared in those with and without autoimmune disease. Logistic regression showed a significant impact of COVID-19 severity on antibody titres in people with and without autoimmune disease (p = 0.003 and < 0.001 respectively). In both mild and severe disease, autoimmunity had no effect on antibody titres (p = 0.253 and 0.119 respectively).

Conclusion

People with and without autoimmune disease presented with similar symptoms of COVID-19. In our sample, subjects with autoimmune disease were less likely to be hospitalised or require respiratory support. Serology revealed no difference in antibody titres against SARS-CoV-2 in participants with and without autoimmune disease.
| Participants with autoimmune disease (n = 26) | Participants without autoimmune disease (n = 26) |
|---------------------------------------------|-----------------------------------------------|
| **Average age** 58 | 55 |
| **Male to female ratio** 10:16 | 10:16 |
| **Ethnicity** | | |
| White 50% | White 62% |
| Black 23% | Black 12% |
| Asian 27% | Asian 15% |
| Other 4% | |
| **Co-morbidities** | | |
| Hypertension 35% | Hypertension 23% |
| Diabetes 19% | Diabetes 20% |
| Obstructive lung disease 12% | Obstructive lung disease 15% |
| Interstitial lung disease 12% | Interstitial lung disease 0% |
| Ischaemic heart disease 4% | Ischaemic heart disease 12% |
| **Most common symptoms of COVID-19 infection** | | |
| Malaise 73% | Malaise 84% |
| Cough 73% | Cough 85% |
| Fever 70% | Fever 77% |
| Dyspnoea 62% | Dyspnoea 65% |
| **Level of care required during acute illness** | | |
| Home 39% | Home 27% |
| Ward 57% | Ward 58% |
| Intensive Care Unit 4% | High Dependency Unit 15% |
| **Respiratory support** | | |
| None 65% | None 46% |
| Oxygen therapy 30% | Oxygen therapy 38% |
| Non-invasive ventilation 0% | Non-invasive ventilation 15% |
| Invasive ventilation 5% | Invasive ventilation 0% |

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