Conclusion: From the sample surveyed, it appears that high risk comorbidities, severity of RA at diagnosis and type of previous therapy are key differentiating points behind IL-6 usage in RA patients pre vs during the COVID-19 pandemic. With the increasing risk that RA patients may experience severe side effects if infected with COVID-19 and guidance to use IL-6 inhibitors in certain patient cohorts during this time, this may explain the patterns seen in our dataset. Further investigation using comparator cohort is warranted.

REFERENCES:
[1] van der Togt, D. Ten Cate, B. Van den Bemt, J. Rahamat-Langendono, N. Den Broeder, A. Den Broeder, S. Maartenskliniek, Rheumatology, Ubbergen, Netherlands; S. Maartenskliniek, Pharmacy, Ubbergen, Netherlands; A. University Medical Center, Clinical Pharmacy, Nijmegen, Netherlands; Erasmus MC, Medical Microbiology, Rotterdam, Netherlands; Radboud University Medical Center, Rheumatic Diseases, Nijmegen, Netherlands

Background: Around 60% of rheumatoid arthritis (RA) patients treated with ≥1000 mg rituximab (RTX) has an insufficient deemed humoral response after two COVID-19 vaccinations.[1] Recent research shows that a third COVID-19 vaccine may actually lead to a humoral response in 27% of patients with a previous non-response.[2] After two-dose vaccination, both ultra-low dose (ULD) 200 mg RTX and a longer time between latest RTX and vaccination were positively associated with sufficient response.[3] Yet, no data is available on the effect of those variables after a third vaccination in these ULD patients with an insufficient response after two vaccinations.

Objectives: To investigate the role of dosage and relative timing of RTX and vaccination on humoral response after a third COVID-19 vaccine in RA patients treated with RTX with insufficient humoral response after two COVID-19 vaccinations.

Methods: We included RA patients treated with ≥1 RTX dose in the year previous to the first vaccine from the COVAC cohort (Netherlands Trial Register, NL9342), who had an insufficient humoral response after two COVID-19 vaccines. Humoral response was measured 2-6 weeks after the third vaccine. As there is still a lot of uncertainty about a serological correlate of protection, we dichotomized between ‘sufficient’ and ‘insufficient’ response based on the cut-off of the specific assay used. Univariable logistic regression was used to investigate the association between dosing and timing, and sufficient response.

Results: Eighty-nine patients had an antibody measurement performed within the right time-frame and could be included (Table 1). Overall, 17 patients (19%) had a sufficient antibody response. Proportion of patients with sufficient humoral response was higher when the latest dose was 200 mg compared to 500 and 1000 mg (38% versus 21% versus 13% (Figure 1); odds ratio 200 mg versus 1000 mg (OR 4.25; 95% CI 1.08-19.84 (p=0.039)).

Discussion: While 60% of patients treated with ≥1 RTX dose in the year previous to the first vaccine from the COVAC cohort (Netherlands Trial Register, NL9342), who had an insufficient humoral response after two COVID-19 vaccines, humoral response was measured 2-6 weeks after the third vaccine. As there is still a lot of uncertainty about a serological correlate of protection, we dichotomized between ‘sufficient’ and ‘insufficient’ response based on the cut-off of the specific assay used. Univariable logistic regression was used to investigate the association between dosing and timing, and sufficient response.

Method: We included RA patients treated with ≥1 RTX dose in the year previous to the first vaccine from the COVAC cohort (Netherlands Trial Register, NL9342), who had an insufficient humoral response after two COVID-19 vaccines. Humoral response was measured 2-6 weeks after the third vaccine. As there is still a lot of uncertainty about a serological correlate of protection, we dichotomized between ‘sufficient’ and ‘insufficient’ response based on the cut-off of the specific assay used. Univariable logistic regression was used to investigate the association between dosing and timing, and sufficient response.

Results: Eighty-nine patients had an antibody measurement performed within the right time-frame and could be included (Table 1). Overall, 17 patients (19%) had a sufficient antibody response. Proportion of patients with sufficient humoral response was higher when the latest dose was 200 mg compared to 500 and 1000 mg (38% versus 21% versus 13% (Figure 1); odds ratio 200 mg versus 1000 mg (OR 4.25; 95% CI 1.08-19.84 (p=0.039)). Time since latest RTX infusion was not significantly associated with sufficient response after third vaccination (OR 1.00; 95% CI 1.00-1.01 (p=0.15)).

Table 1. Characteristics and outcomes sorted by rituximab dose before first vaccination

<table>
<thead>
<tr>
<th>200 mg (n=13)</th>
<th>500 mg (n=34)</th>
<th>1000 mg (n=42)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (years)</strong></td>
<td>66 ± 11</td>
<td>67 ± 11</td>
</tr>
<tr>
<td><strong>Female sex</strong></td>
<td>7 (54%)</td>
<td>29 (85%)</td>
</tr>
<tr>
<td><strong>Disease duration (years)</strong></td>
<td>21 (16-26)</td>
<td>18 (8-26)</td>
</tr>
<tr>
<td><strong>RF and/or ACPA positive</strong></td>
<td>13 (100%)</td>
<td>27 (80%)</td>
</tr>
<tr>
<td><strong>Concomitant csDMARD use at baseline</strong></td>
<td>7 (54%)</td>
<td>21 (62%)</td>
</tr>
<tr>
<td><strong>Duration of RTX use (years)</strong></td>
<td>5.8 ± 3.1</td>
<td>4.9 ± 3.1</td>
</tr>
<tr>
<td><strong>Days between latest RTX and 3rd vaccine</strong></td>
<td>127 (100-160)</td>
<td>117 (99-153)</td>
</tr>
<tr>
<td><strong>Latest RTX dose before 3rd vaccine</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200 mg</td>
<td>12 (92%)</td>
<td>1 (3%)</td>
</tr>
<tr>
<td>500 mg</td>
<td>1 (8%)</td>
<td>31 (91%)</td>
</tr>
<tr>
<td>1000 mg</td>
<td>0 (0%)</td>
<td>2 (6%)</td>
</tr>
<tr>
<td><strong>Sufficient humoral response after 3rd vaccine</strong></td>
<td>5 (38%)</td>
<td>7 (21%)</td>
</tr>
</tbody>
</table>

Either displayed as number (percentage), median (interquartile range) or mean ± standard deviation.

Figure 1. Humoral response rate after third COVID-19 vaccination sorted by baseline rituximab dose

Conclusion: Our study shows that a third COVID-19 vaccine can induce sufficient humoral response in a relevant proportion of (ultra-)low dose RTX treated RA patients who did not respond to the first two vaccinations, and that lower RTX dosing is associated with significant higher proportion of patients with sufficient humoral response. In contrast to the analysis after two vaccine doses, time since latest infusion was not significantly associated with response.

REFERENCES:

Acknowledgements: We thank the staff of the rheumatology outpatient clinic of the Sint Maartenskliniek for performing blood sampling for this study, and Paul Daemen for performing the assays.

Disclosure of Interests: Celeste van der Togt: None declared, david cote: None declared, Bart van den Bemt: Speakers bureau: UCB, Pfizer, Sanofi-aventis, Galapagos, Amgen and Eli Lilly, Janette Rahamat-Langen doen: None declared, Nathan den Broeder: None declared, Allons den Broeder: Grant/research support from: Abbvie, Galapagos, Pfizer, Novartis, Lilly, Sanofi, Gilead


POS1207 EQUITY CONSIDERATIONS IN COVID-19 VACCINATION STUDIES OF INDIVIDUALS WITH AUTOIMMUNE INFLAMMATORY RHEUMATIC DISEASES

H. Wang1,2, O. Dewidar3, S. Whittle4,5, E. Ghogomu5, G. Hazlewood6, L. Mbaaquadw1,2,3, J. Pardo Parado6, P. Robinson5, R. Buchbinder1,2.

V. Welch7, University of Ottawa, Medicine, Ottawa, Canada; Bruyere Research Institute, Methods Centre, Ottawa, Canada; The Queen Elizabeth Hospital, Rheumatology Unit, 28 Woodville Road, Australia; Cabrini Health, Monash-Cabrini Department of Musculoskeletal Health and Clinical Epidemiology, Melbourne, Australia; University of Calgary, Cumming School of Medicine, Calgary, Canada; McMaster University, Health Research Methods, Evidence and Impact, Hamilton, Canada; St Joseph’s Healthcare, Biostatistics Unit, Father Sean O’Sullivan Research Centre, Hamilton, Canada; Yavoué Central Hospital, Centre for Development of Best Practices in Health (CDBPH), Yaoundé, Cameroon; Stellenbosch University, Department of Global Health, Cape Town, South Africa; Cochrane Musculoskeletal Group, Department of Medicine, University of Ottawa, Ottawa, Canada; University of Queensland, School of Clinical Medicine, Herston, Australia; Monash University, Department of Epidemiology and Preventive Medicine, Melbourne, Australia

Background: Individuals with autoimmune inflammatory rheumatic diseases (AIRDs) have an increased baseline risk of severe COVID-19 infection. Intersection of inequity factors may result in more severe adverse effects through influencing opportunities for health. We sought to examine the extent to which populations experiencing inequities were considered in studies of COVID-19 vaccination in individuals with AIRDs.

Objectives: The objective of this study is to assess how health equity is considered in studies of COVID-19 vaccination studies in individuals with AIRDs.

Methods: All studies (N=19) from an ongoing Cochrane living systematic review on the effects of COVID-19 vaccination in people with AIRDs were included. We identified inequity factors using the PROGRESS-Plus framework which stands for Place of residence, Race/ethnicity, Occupation, Gender/sex, Religion, Education, Socioeconomic status, and Social capital. Age, multimorbidity, and...
health literacy were also assessed as “Plus” factors. We applied the framework to assess equity considerations in relation to differences in COVID-19 baseline risk, description of participant characteristics, controlling for confounding factors, subgroup analysis and applicability of study findings.

RESULTS:

...facilitating informed decisions about the applicability of study results to the population of interest.

REFERENCES:


POS1209

THE IMPACT OF THE COVID-19 PANDEMIC ON WORK PRODUCTIVITY IN PATIENTS WITH SPONDYLARTHRITIS: RESULTS FROM THE DUTCH SPA-NET REGISTRY

C. Webers1,2, A. Van Tubergen1,2, H. Vonkeman3, A. Boonen1,2, H. Vandeput1,2, M. Lepage1,2, J. Orts3,4, C. Maelicke5, J. Oelschlägel6, C. van der Heijde7, J. Veys8, J. van der Linden8, M. van den Bosch5,9, J. Poddighe10,11, J. van der Graaf11, C. Webers: None declared, A. Van Tubergen: None declared, H. Vonkeman: None declared, A. Boonen: None declared, H. Vandeput: None declared, M. Lepage: None declared, J. Orts: None declared, C. Maelicke: None declared, J. Oelschlägel: None declared, C. van der Heijde: None declared, J. Veys: None declared, J. van der Linden: None declared, M. van den Bosch: None declared, J. van der Graaf: None declared, C. Webers: None declared. DOI: 10.1136/annrheumdis-2022-eular.1112

POS1210

SAFETY AND IMMUNOREACTIVITY OF COVID-19 VACCINES IN PATIENTS WITH IMMUNE MEDIATED INFLAMMATORY DISEASE

C. Hitchon1, R. Marrie1, C. N. Bernstein1, J. Kim2, S. Obrien3, H. Hitchon1, R. Marrie1, C. N. Bernstein1, J. Kim2, S. Obrien3: 1University of Manitoba, Internal Medicine, Winnipeg, Canada; 2Public Health Agency of Canada, National HIV/AIDS Laboratories, Winnipeg, Canada; 3Canadian Blood Services, Epidemiology & Surveillance Canadian – Blood Services, Ottawa, Canada. Background: COVID-19 vaccination strategies have evolved with increasing vaccine availability and emerging vaccine safety data. While data on immunogenicity and safety of COVID vaccination strategies exists, there is limited data...