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## 2233 UPDATED RESULTS OF THE COVID-19 IN MS GLOBAL DATA SHARING INITIATIVE: ANTI-CD20 DMTS DELETERIOUS FOR COVID-19 SEVERITY BUT INTERFERONS NOT PROTECTIVE AMONG PEOPLE WITH MS


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**Objectives** Some disease-modifying therapies (DMTs) have been associated with COVID-19 severity in people with MS. Comprehensive exploration of these relationships in large international samples is needed.

**Methods** Clinician-reported demographic/clinical data from 27 countries were aggregated into a dataset of 5,648 patients with suspected/confirmed COVID-19. COVID-19 severity outcomes (hospitalisation, admission to ICU, requiring artificial ventilation, death) assessed using multilevel mixed-effect ordered probit and logistic regression, adjusted for age, sex, disability, and MS phenotype. DMTs were compared to glatiramer acetate, dimethyl fumarate, pooled other DMTs, and natalizumab.

**Results** Of 5,648 patients (83.4% confirmed COVID-19) were included. Compared to glatiramer acetate, ocrelizumab and rituximab were associated with higher probability of hospitalisation (4%(95%CI=1–7) & 7%(95%CI=4–11)), ICU/artificial ventilation (2%(95%CI=0–4) & 4%(95%CI=2–6)), and death (1%(95%CI=0–2) & 2%(95%CI=1–4)) [predicted marginal effects]. Untreated patients had 5%(95%CI=2–8), 3%(95% CI=1–5), and 1%(95%CI=0–3) higher probabilities of the three respective levels of COVID-19 severity than glatiramer acetate. Compared to pooled other DMTs and to natalizumab, the associations of ocrelizumab and rituximab with COVID-19 severity were also more pronounced. Evaluation of interferon associations with COVID-19 severity found these only apparent in comparison with the untreated but not vs individual or pooled other DMTs. All associations persisted/enhanced on restriction to confirmed COVID-19.

**Conclusions** Analysing the largest international real-world dataset of people with MS with suspected/confirmed COVID-19 confirms that the use of anti-CD20 medication (both ocrelizumab and rituximab) are associated with more severe course of COVID-19, while interferon-based DMTs have no intrinsic protective benefit from other treatment.


## 2242 COMPARISON OF THE EFFECTIVENESS OF OCRELIZUMAB VS INTERFERON β, FINGOLIMOD AND NATALIZUMAB ON RELAPSES IN RELAPSING-REMITTING MULTIPLE SCLEROSIS


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**Objective** To compare the effectiveness of ocrelizumab with interferon-β, fingolimod and natalizumab in relapsing-remitting multiple sclerosis (MS).

**Method** Using the MSBase registry, we identified patients with relapsing-remitting MS treated for >=6 months with ocrelizumab, interferons (interferon β-1a, interferon β-1b subcutaneous or interferon β-1b intramuscular), fingolimod or natalizumab. Patients were matched with propensity score on baseline age, sex, MS duration, EDSS, relapse rate, prior therapy, disease activity, MRI, reason for discontinuation of preceding therapy and country. Annualised relapse rates (ARR) and cumulative hazard of relapses were compared in pairwise-censored groups.

**Results** 106 patients treated with ocrelizumab were matched with 209 patients on interferon therapies. Over a pairwise-censored mean follow-up of 1.3 years, ocrelizumab was associated with lower relapse rates (ARR 0.08 vs 0.27, p<0.001) and lower risk of relapse (HR 0.30, 95%CI 0.15–0.57) than




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