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SS02.04 - First results of the COVID-19 in MS Global Data Sharing Initiative suggest anti-CD20 DMTs are associated with worse COVID-19 outcomes

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Abstract

Background

As the COVID-19 pandemic amplifies, efforts to minimise the risk on vulnerable people are essential. People with multiple sclerosis (MS) may be a vulnerable group due to the high proportion taking long-term immunosuppressive disease-modifying therapies (DMTs). Studies from Italy and France suggest older age, higher disability and progressive MS are associated with severe COVID-19, yet there remains uncertainty around the influence of DMTs.

Objectives

Given the many approved MS DMTs and the relatively low frequency of COVID-19 in MS patients per country, international data sharing is desirable to examine the impact of DMTs on COVID-19 severity. Here, we present the first results of the COVID-19 in MS global data sharing initiative of the MS International Federation and MS Data Alliance and many other data partners to inform MS clinical management during the COVID-19 pandemic.

Methods

Clinician-reported data from 21 countries were aggregated into a dataset of 1540 patients. Characteristics of admission to hospital, admission to intensive care unit (ICU), need for artificial ventilation, and death, were assessed in patients with confirmed or suspected COVID-19 infection using log-binomial regression. Adjusted prevalence ratios (aPR) were calculated adjusting for age, sex, MS type, and Expanded Disability Status Scale (EDSS).

Results

Of 1540 patients, 476 (30.9%) with suspected and 776 (50.4%) with confirmed COVID-19 were included in the analysis. Older age, progressive MS and higher EDSS were associated with higher frequencies of severe outcomes. Anti-CD20 DMTs, ocrelizumab and rituximab, were positively associated with hospital admission (aPRs=1.19 & 1.58), ICU admission (aPRs=3.53 & 4.12), and the need for artificial ventilation (aPRs=3.17 & 7.27) compared to dimethyl fumarate. Higher frequencies of all three outcomes were associated with combined anti-CD20 DMT use

compared to all other DMTs (hospitalisation aPR=1.49; ICU aPR=2.55; ventilation aPR=3.05) and compared to natalizumab (hospitalisation aPR=1.99; ICU aPR=2.39; ventilation aPR=2.84). Importantly, associations persisted

on restriction to confirmed COVID-19 cases and upon exclusion of each contributing data source in turn. No associations were observed between DMTs and death.

Conclusions

This study used the largest federated international cohort of people with MS and COVID19 currently available. We demonstrate a consistent association of anti-CD20 DMTs with hospitalisation, ICU admission and use of artificial ventilation suggesting their use among MS patients at risk for COVID-19 exposure may be a risk factor for more severe COVID-19 disease. To address study limitations, further research incorporating comorbidities, smoking and body mass index is required. Alternative study designs are needed to address questions on COVID-19 susceptibility among people with MS.