Rituximab

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COVID-19: case report

A 25-year-old woman developed COVID-19 during immunosuppressive treatment with rituximab for neuromyelitis optica spectrum disorder (NMOSD).

The woman presented in April 2020 for a COVID-19 screening after a close contact with a COVID-19 patient. Her medical history was significant for NMOSD (diagnosed 7 years ago) and she had started receiving treatment with IV rituximab 1g infusion every 6 months. She had received her last rituximab infusion prior to 5 months of her current presentation. At the time of her COVID-19 screening, she was asymptomatic without any complaints of upper respiratory tract irritation. Neurological analysis indicated an Expanded Disability Status Scale of 2. She also underwent serologic testing, which tested positive for severe acute respiratory syndrome coronavirus (SARS-CoV) IgG and IgM. According to the Iranian guideline for the continuation of disease modifying treatment during COVID-19 pandaemic and low B-cell count, her scheduled rituximab dose was postponed to September 2020. After 25 days (in November 2020), she presented with a 5-day history of shortness of breath, fever and severe chills. CT chest revealed bilateral ground glass infiltrates, consistent with a diagnosis of COVID-19. The occurrence of COVID-19 was attributed to immunosuppressive treatment with rituximab [*duration of treatment to reaction onset not stated*].

The woman was admitted and received unspecified standard treatment along with non-invasive oxygen supplementation. COVID-19 was additionally confirmed by a nasopharyngeal polymerase chain reaction (PCR) assay. She was discharged given the improvement and lack of progression of COVID-19. However, her symptoms had not completely resolved. Three weeks later, an exacerbation of her respiratory symptoms were observed and she was re-admitted. Initial vital signs revealed oxygen saturation 86% at room air, BP 120/75mm Hg, heart rate 110 beats/min, RR 22 breaths/min and body temperature 38.0°C. An Expanded Disability Status Scale score of 3.5 was detected. Chest CT showed diffuse bilateral lung involvement. In addition to this, COVID-19 PCR still tested positive. She was then admitted to an ICU and was placed on ventilation support because of respiratory distress. As per the pulmonary disease service consultation, treatment was commenced with therapeutic plasma exchange (TPE) because of COVID-19 related severe respiratory involvement. Off-label 5%albumin-human [albumin] was used as a replacement fluid during TPE. She was extubated on day 10 of admission following gradual resolution of her symptoms. She was then shifted to a ward 5 days later. Later, due to a haemodynamically stable condition and remarkable improvement of lung infiltration, she was discharged on day 31 of admission. Monthly neurological evaluation showed no evidence of any clinical activity of COVID-19. In March 2021, she was re-evaluated and received immune-globulin for low IgG levels, following to which a decision to resume rituximab was made.

Paybast S, et al. Recurrence of COVID-19 in a Patient With NMO Spectrum Disorder While Treating With Rituximab: A Case Report and Review of the Literature. [Review]. The neurologist 26: 281-283, No. 6, 4 Nov 2021. Available from: URL: http://doi.org/10.1097/NRL.0000000000000371 803651280