

Immunosuppressants

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Covid-19 pneumonia and delayed viral clearance: case report

A 46-year-old woman experienced Covid-19 pneumonia and delayed viral clearance following immunosuppression therapy with cyclophosphamide, methylprednisolone, prednisolone and tacrolimus for interstitial pneumonia secondary to anti-melanoma differentiation-associated gene-5 (MDA5) antibody-positive dermatomyositis (DM) [*not all routes and dosages stated*].

The woman, who had been diagnosed with interstitial pneumonia secondary to anti-MDA5 antibody-positive DM in February 2020, subsequently started receiving remission induction therapy, comprising pulse therapy with methylprednisolone 500 mg/day for 3 days, followed by post-therapy prednisolone 50 mg/day, IV cyclophosphamide pulse therapy and tacrolimus 4 mg/day as triple therapy. Thereafter, the pneumonia improved, and the anti-MDA5 antibody titre decreased. She was discharged after 4 cycles of IV cyclophosphamide (750 mg/dose), and further cycles were scheduled. However, on 23 April 2020, she developed a non-productive cough. She presented to hospital on 6 May 2020. Chest CT scan revealed non-segmental, bilateral diffuse ground-glass opacities. Her oxygen saturation (while on 2L oxygen via nasal cannula) was 96%. Blood tests at admission revealed the following: low lymphocyte count, hypercoagulability and an inflammatory reaction. Her ferritin levels were normal, but fluctuated prior to admission, suggesting a mild increase. Anti-MDA5 antibody titres continued to show an improving trend. On day 2 of admission, PCR tests performed on a nasopharyngeal swab sample confirmed SARS-CoV-2 positivity, leading to the diagnosis of Covid-19.

The woman received off-label therapy with inhaled ciclesonide, favipiravir and nafamostat for 14 days. Oxygen supplementation was discontinued on day 5 of admission. Chest CT scan revealed reduced findings of pneumonia on day 16 of admission. Additionally, PCR tests were performed on alternate days, starting on day 16. On day 29, she developed erythematous papules on the limbs and trunk. Antibody tests for cytomegalovirus, Epstein-Barr virus, herpes simplex virus and herpes zoster virus were all found to be negative, suggesting that the eruptions were secondary to Covid-19. The eruptions spontaneously improved, and she was discharged on day 46, after two consecutive PCRs showed negative results. The immunosuppression was thought to have caused delayed viral clearance, given the prolonged hospitalisation course of 1.5 months.

Kogami M, et al. Complication of coronavirus disease 2019 during remission induction therapy against anti-MDA5 antibody-positive dermatomyositis. *Rheumatology Advances in Practice* 4: No. 2, 2020. Available from: URL: <http://doi.org/10.1093/rap/rkaa068>

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