Tozinameran

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Interstitial lung disease: case report

A 60-year-old man developed interstitial lung disease following administration of tozinameran for COVID-19 vaccination [*route not stated*].

The man, who had medical history of asthma-chronic obstructive pulmonary disease overlap syndrome, hypertension, received first dose and second dose of tozinameran [BNT162b2-covid-19 vaccine]. After four days of receiving second dose, was hospitalised (24 days after receiving first dose) due to dyspnea on exertion. He had been receiving unspecified antihypertensives and corticosteroids for comorbidities. He also had medical history of a complete right bundle branch block and mild mitral regurgitation. He was smoker for the previous 20 years and stopped from the previous 3 years. On examination, he was afebrile with oxygen saturation of 80%. He immediately started on supplemental oxygen. Chest X-ray revealed infiltrative shadows in bilateral lung fields. Chest CT showed extensive ground-glass opacification (GGO) with right upper lobe predominance, mild interlobar septal wall thickening, and diffuse bronchial wall thickening. Laboratory workup revealed elevated CRP, lactate dehydrogenase of 299 U/L, Krebs von den Lungen-6 of 800 U/mL, surfactant protein-D of 155 ng/mL, surfactant protein-A of 68.5 ng/mL, elevated BNP and procalcitonin of 0.06 ng/mL. Sputum did not reveal presence of any organism. Urine pneumococcal antigen test, Legionella antigen test and COVID-19 test were negative. Markers for various autoimmune diseases were negative. ECG was unremarkable, when it was compared to the ECG performed 2 months previously. Cardiac enzymes were unremarkable. His respiratory condition worsened gradually and he was kept on mechanical ventilation. He was then treated with antibacterial prophylaxis of ampicillin/sulbactam and azithromycin. Thereafter, vaccine-induced pneumonia as the most likely diagnosis was considered.

The man started receiving methylprednisolone. Nasopharyngeal swabs on day 2 and day 3 of hospitalization were negative for SARS-CoV-2 infection. He underwent bronchoscopy with bronchoalveolar lavage. Iron staining did not suggested diffuse alveolar haemorrhage. Investigation on bronchoalveolar fluid revealed 32 cells comprising of neutrophils, lymphocytes of 31.3%, macrophage of 46.9% and

eosinophils of 0%. The CD4+/CD8+ ratio was slightly alleviated. These findings were consistent with vaccine-induced interstitial lung disease. Infectious workup was unremarkable. Drug lymphocyte stimulation test for tozinameran under steroid administration indicated a stimulation index of 174%. After steroidal therapy, he received prednisolone. On day 7, he was extubated. Haematological investigation on same day revealed improvisation in in the levels of Krebs von den Lungen-6, surfactant protein-D and surfactant protein-A. Chest CT scan also revealed a significant improvement. He continued improvising with steroidal therapy.

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