Tozinameran

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Acute myocarditis: case report

A 40-year-man developed acute myocarditis following vaccination with tozinameran for Coronavirus disease-2019 (COVID-19).

The man had a history of COVID-19 pneumonia. He received tozinameran [BNT162b2 mRNA vaccine; *dosage and route not stated*] vaccine for COVID-19. He developed nausea, myalgia and subjective fevers following vaccination. Three days following the vaccination, he presented to the hospital reporting onset pleuritic chest pain and dysponea. On presentation, examination showed moderate distress due to chest discomfort, body temperature of 36.9°, BP 142/84mm Hg, heart rate 107 beats/min, oxygen saturation of 100% on ambient air. He showed mild jugular venous distention without murmurs, rubs, or gallops. His medication included testosterone and reported occasional marijuana use. An ECG showed normal sinus rhythm with diffuse ST elevations across all leads, except lead III and aVR and V1 where there were ST depressions. Complete blood count demonstrated WBC count of 15600 cells/µL, neutrophils 74%, lymphocytes 15.% and eosinophils 0.1%. Laboratory investigations showed serum creatinine of 1.08 mg/dL, aspartate aminotransferase 66 IU/L, alanine transaminase 32 IU/L. Initial high sensitivity troponin-I was 8935 ng/L, creatinine kinase-MB 26.62 ng/mL, both peaked at 20301.0 ng/L and 46.65 ng/mL, respectively after 10 hours. BNP of 104.6 pg/mL, CRP of 7.6 mg/dL and ESR of 19 mm/hour were noted. Respiratory viral polymerase-chain reaction panel along with COVID-19 polymerase-chain reaction turned negative. His anti-severe acute respiratory syndrome coronavirus 2 immunoglobulin G titer was >400. ECG showed mild global hypokinesis with an ejection fraction of 47% and trivial pericardial effusion. A right heart cathertisation was performed and was significant for elevated filling pressures, elevated cardiac output and elevated cardiac index. An endomyocardial biopsy was performed and revealed myocyte hypertrophy with rare non-specific myocyte vacuolisation without signs of inflammatory infiltration. Cardiac MRI demonstrated left ventricular ejection fraction of 52% along with normal ventricular motion. Myocardial oedema and delayed enhancement in the inferior wall of basal left ventricular myocardium were noted. Based on clinical presentation and laboratory investigations, he was diagnosed with acute myocarditis associated with tozinameran [*time to reaction onset not stated*].

The man was hospitalised and was treated with bumetanide and prednisone. He showed resolution of symptoms following treatment. At 4 weeks follow-up, he reported occasional pleuritic left sided discomfort of unknown origin. He was treated with ibuprofen and colchicine and showed complete resolution of symptoms after 3 weeks.

Wu B, et al. Acute myocarditis after receiving first dose of BNT162b2 mRNA vaccine. Journal of Cardiology Cases 25: 348-350, No. 6, 2022. Available from: URL: http://doi.org/10.1016/j.jccase.2021.12.009

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