

Tozinameran

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Various toxicities: case report

A 24-year-old man developed fever, chills, fatigue, headache, lower back pain and acute myocarditis following tozinameran vaccination.

The man presented to the emergency department (ED) with chest pain for 30 minutes, which had woken him from sleep. His pain was severe, constant, left-sided, non-radiating and was associated with headache. He did not have any known medical history and did not take any over-the-counter medications for pain relief. It was reported that he had received tozinameran [BNT162b2; *route and dosage not stated*] vaccine. On the same day of dose 2, he developed subjective fever, chills, fatigue, headache and lower back pain.

The man's subjective fever, chills, fatigue, headache and lower back pain resolved over the next 24 hours. Three days after the vaccination, he developed chest pain and presented to the ED (current presentation). On admission, his symptomatic review was negative for vomiting, diaphoresis, nausea, dizziness, light-headedness, vision changes, orthopnoea, shortness of breath and paroxysmal nocturnal dyspnoea. He is non-smoker, consumed alcohol socially and never used illicit drugs. He declined recent sick contacts or travel did not have family history of autoimmune disease, sudden cardiac death or other cardiac disease. On presentation, his physical examination was unremarkable. His investigations as followed: temperature 37.6°C, BP 91/52 mmHg, HR 92 beats/minute, RR 18 breaths/minute, oxygen saturation 98% on room air and BMI 27.7 kg/m², haemoglobin 12.9 g/dl, haematocrit 38.7%, total leucocyte count 7.3 x 10³/mm³, absolute neutrophil count 5.0 x 10³/mm³, absolute lymphocyte count 1.14 x 10³/mm³, platelets 161K/mm³, MCV 89fl, red cell distribution width (RDW) 12.5% , blood urea nitrogen 13 mg/dL, serum creatinine 0.83 mg/dL, high-sensitivity troponin I initial value 2529 pg/mL, high-sensitivity troponin I peak value 6803 pg/mL, brain natriuretic peptide 42 pg/ml, D-dimer 0.33 µg/mL, ESR 21 mm/hr, C-reactive protein 24.8 mg/L, creatinine kinase 450 U/L, prothrombin time 14.2s, international normalised ratio 1.1, partial thromboplastin time 30s, iron level 43 µg/dL, total iron binding capacity 274 µg/dL, iron saturation 16%, ferritin 108.0 ng/mL, folate 19.6 ng/ml, TSH 1.415 mIU/mL, sodium 136 mEq/L, potassium 3.6 mEq/L, chloride 102 mEq/L, bicarbonate 23 mEq/L, glucose 93 mg/dL, calcium 8.8 mg/dL, bilirubin 0.5 mg/dL, total protein 6.9 g/dL, albumin 4.4 g/dL, ALP 54 U/L, AST 22 U/L, ALT 9 U/L, phosphorus 3 mg/dL, magnesium 1.9 mg/dL, cholesterol 109 mg/dL, triglycerides 73 mg/dL, VLDL 15 mg/dL, HDL 37 mg/dL and LDL 50 mg/dl. Coxsackievirus B1 antibody titre and SARS-CoV-2 antigen and a PCR test were found to be negative. The PCR panel for virological investigations were negative. Chest X-ray and CT angiography were normal. EKG demonstrated normal sinus rhythm. An echocardiogram revealed an ejection fraction of 55%. Cardiac catheterisation demonstrated normal coronary arteries. Cardiac MRI with and without contrast revealed linear sub-epicardial enhancement involving the lateral wall of the left ventricle. Based on presenting symptoms and investigational findings, a diagnosis of acute myocarditis was made. Eventually, an improvement in his condition was noted. He was admitted for 4 days and discharged from the hospital in a stable condition. Six weeks later, he was seen in outpatient clinic and was well.