Multiple drugs

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Various toxicities: case report

A 25-year-old man developed thrombotic thrombocytopenic purpura and injection site pain following administration COVID-19 vaccination with mRNA-1273. Additionally, he developed acne during treatment with prednisolone; elevated liver enzymes during treatment with cotrimoxazole; and chills during treatment with plasma [*routes not stated; not all dosages stated*].

The man (107kg, 175cm) presented to the emergency department (ED) with malaise, fatigue and a severe headache on 17 June 2020. Around 13 days before presentation, he had received the first dose of mRNA-1273 [Spikevax; Moderna Biotech, USA]. Following this, he developed injection site pain and 2 days later, he developed a headache. The next day, he developed a fever (38.7°C) and it was treated with paracetamol [acetaminophen]. On day 4, he developed a rash on his abdomen and legs. Then, his urine colour was orange with foul-smelling. Subsequently, he developed fatigue, vomiting and severe headache (current presentation). On current admission, he had anxiety. Then, his laboratory tests showed haemolytic anaemia (Hb 7.4 g/dL), low platelet count (29 /nL) and elevated creatine level (1.5 mg/dL). From the above findings, a presumptive diagnosis of acquired thrombotic thrombocytopenic purpura (aTTP) was made. This diagnosis was supported with a high PLASMIC score of 6 points and 72% of ADAMTS-13 deficiency. His head CT scan was non significant, and there were no clinical signs of cerebral or peripheral thrombosis. Also, he underwent test for heparin-induced thrombocytopenia, heparine-induced platelet activation (HIPA) and platelet factor-4 enhanced platelet-activation test; however, these tests were negative. Additionally, he underwent cranial MRI, which exclude cerebral sinus venous thrombosis. Other reasons, which may lead to the thrombotic thrombocytopenic purpura were studied such as viral infections, autoimmune disorders, haematological or solid organ malignancies were negative. Also Shigatoxin-producing enterohemorrhagic *E. coli* as trigger for typical haemolytic uraemic syndrome was ruled out.

Thereafter, the man received 2L of plasma [fresh frozen plasma] along with prednisolone 250mg daily for 3 days and caplacizumab. However, he developed chills. Thereafter, his thrombocyte count return to baseline level and therefore, plasma exchange was stopped. Subsequently, he developed acne. Then, his dose of prednisolone was reduced to 6mg daily. A week later of admission, his ADAMTS-13 returned highly suppressed (less than 1%) and elevated ADAMTS-13 antibodies. Therefore, the suspected diagnosis was confirmed. Then, he received treatment with rituximab. Thereafter, he was discharged from the hospital and had regular outpatient follow up. He was also receiving medications such as candesartan-cilexetil [candesartan] for hypertension, prophylaxis treatment with vitamin D, pantoprazole and cotrimoxazole. Following a month after initial admission, his aTTP was resolved and laboratory tests were normal. However, during treatment, he developed elevated liver enzymes secondary to cotrimoxazole. Therefore, his treatment with cotrimoxazole was paused after 2 weeks. He was advised to hold for the second dose of vaccine [*duration of treatments to reaction onsets not stated; not all outcomes stated*].

Osmanodja B, et al. First diagnosis of thrombotic thrombocytopenic purpura after SARS-CoV-2 vaccine - case report. BMC Nephrology 22: 411, No. 1, 11 Dec 2021. Available from: URL: http://doi.org/10.1186/s12882-021-02616-3

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