mRNA-1273

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Acute meningoencephalitis, myoclonus and Sweet's syndrome: case report

A 77-year-old man developed acute meningoencephalitis, myoclonus and Sweet's syndrome following vaccination with mRNA-1273 for prevention of COVID-19 infection.

The man, who had a history of coronary artery disease, hyperlipidaemia and hypothyroidism, was admitted due to confusion, fever and generalised rash after receiving the first dose of the mRNA-1273 vaccine. Fever started one day after vaccine administration and was episodic, lasting for minutes to hours and recurring throughout the day. Over the following 48h, he developed a generalised body rash starting from the trunk and spreading to the extremities. Thereafter, he began to experience headache, dizziness and double vision, which later progressed gradually to severe encephalopathy in the course of 5 days. On dermatological examination, he was noted to have deep red, non-scaly, oedematous papules coalescing into plaques on the abdomen, upper chest, proximal upper extremities, bilateral upper flanks and back with scattered non-follicular pustules. On neurological examination, he had intermittent and irregular orofacial movements and bilateral upper extremity myoclonus. Deep tendon reflexes were 2+ throughout, without signs of an upper motor neuron lesion. Notably, he presented with leukocytosis and neutrophilia, and elevations in creatine kinase, CRP and ferritin. A CSF analysis revealed leucocytes, erythrocytes, normal glucose and increased protein. All CSF cultures were negative, and the CSF meningoencephalitis panel did not detect any infectious agent. Blood and urine cultures as well as an infectious respiratory panel were all unremarkable. Real time-PCR for SARS-CoV-2 was negative. Antinuclear antibodies and rheumatoid factor were positive. Further autoimmune testing was normal. Continuous video electroencephalogram (vEEG) monitoring revealed a generalised slow background in the theta range, with state changes and reactivity but no sleep features. Skin biopsy showed intracorneal microabscesses, oedematous papillary dermis and a band-like infiltrate of predominantly neutrophils and histiocytoid cells with nuclear debris in the superficial dermis without vasculitic changes and rare eosinophils, consistent with a neutrophilic dermatosis. Evaluation for malignancy was unrevealing. These findings suggested acute meningoencephalitis, myoclonus and Sweet's syndrome.

The man was empirically treated with broad-spectrum antibiotics and antiviral coverage for suspected sepsis and meningitis, including vancomycin, cefepime ceftriaxone, ampicillin, doxycycline and aciclovir for 9 days without any improvement. As no infectious aetiology was found, antimicrobial therapy was de-escalated. Given concerns that the clinical picture might be related to an inflammatory reaction to recent vaccination, a 4-day course of methylprednisolone was started. After the first day of treatment, he had marked improvement in his neurological examination and went from mumbling incomprehensible words to formulating full sentences and regaining orientation to self and place. He was able to follow simple commands consistently. Myoclonus also quickly resolved as well as the orofacial movements. He progressively improved, achieving his baseline before the fourth dose of methylprednisolone. His cutaneous findings significantly improved, with near complete resolution of the pustules within 36h of administration of steroids. At this time, he met both major and all four minor criteria for the diagnosis of Sweet's syndrome. He was switched to prednisone with a plan to taper over the course of 3 weeks. He was discharged 2 days afterwards with no evidence of neurological symptoms and normalisation of initially altered laboratory evaluations. This potential adverse event was reported to FDA through the Vaccine Adverse Event Reporting System.

Torrealba-Acosta G, et al. Acute encephalitis, myoclonus and Sweet syndrome after mRNA-1273 vaccine. BMJ Case Reports 14: No. 7, 26 Jul 2021. Available from: URL: http://doi.org/10.1136/bcr-2021-243173