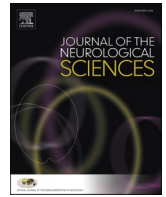




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Hospital-based observational study of neurological disorders in patients recently vaccinated with COVID-19 mRNA vaccines

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ABSTRACT

Purpose: We describe the spectrum of acute neurological disorders among hospitalized patients who recently had COVID-19 mRNA vaccination.

Method: We performed a prospective study at 7 acute hospitals in Singapore. Hospitalized patients who were referred for neurological complaints and had COVID-19 mRNA vaccines, BNT162b2 and mRNA-1273, in the last 6 weeks were classified into central nervous system (CNS) syndromes, cerebrovascular disorders, peripheral nervous system (PNS) disorders, autonomic nervous system (ANS) disorders and immunization stress-related responses (ISRR).

Results: From 30 December 2020 to 20 April 2021, 1,398,074 persons (median age 59 years, 54.5% males) received COVID-19 mRNA vaccine (86.7% BNT162b2, 13.3% mRNA-1273); 915,344(65.5%) completed 2 doses. Four hundred and fifty-seven(0.03%) patients were referred for neurological complaints [median age 67(20–97) years, 281(61.5%) males; 95.8% received BNT162b2 and 4.2% mRNA-1273], classified into 73(16.0%) CNS syndromes, 286(62.6%) cerebrovascular disorders, 59(12.9%) PNS disorders, 0 ANS disorders and 39(8.5%) ISRRs. Eleven of 27 patients with cranial mononeuropathy had Bell's palsy. Of 33 patients with seizures, only 4 were unprovoked and occurred within 2 weeks of vaccination. All strokes occurred among individuals with pre-existing cardiovascular risk factors. We recorded 2 cases of cerebral venous thrombosis; none were vaccine-induced thrombotic thrombocytopenia. Five had mild flares of immune-mediated diseases.

Conclusion: Our observational study does not establish causality of the described disorders to vaccines. Though limited by the lack of baseline incidence data of several conditions, we observed no obvious signal of serious neurological morbidity associated with mRNA vaccination. The benefits of COVID-19 vaccination outweigh concerns over neurological adverse events.

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