Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
COVID-19 vaccine (ChAdOx1 nCoV-19 Corona virus vaccine (Recombinant) – COVISHIELD related MS relapse

Thomas Mathew*, Saji K John

Department of Neurology, St. John’s Medical College Hospital, Sarjapur Road, Bengaluru, Karnataka 560034, India

ARTICLE INFO

Keywords:
Relapse
Multiple sclerosis
COVID 19 vaccine
ChAdOx1 nCoV-19
BNT162b2

ABSTRACT

Background: there are very few reports of COVID-19 vaccine related multiple sclerosis (MS) relapses. Here we report our first case of ChAdOx1 nCoV-19 Corona virus vaccine related MS relapse.

Case presentation: a 24-year-old lady doctor, who had taken ChAdOx1 nCoV-19 Corona virus vaccine got a relapse after seven days of the last dose (second) of the vaccine. Relapse was in the form of paresthesias involving her left upper and lower limbs and Lhermitte’s phenomena. She responded fairly well to a short course of steroids.

Conclusions: this case highlights the importance of counselling MS patients regarding the potential for relapse pre-vaccination and closely monitoring MS patients who are administered the ChAdOx1 nCoV-19 Corona Virus vaccine for any relapse.

Dear Sir/Madam

Please find enclosed our Manuscript titled “COVID-19 vaccine (ChAdOx1 nCoV-19 Corona Virus Vaccine (Recombinant) – COVISHIELD related MS relapse”, which we would like to submit for consideration as short communication article in your esteemed journal.

The authors confirm that this paper is based on original work and has not been published elsewhere in whole or part or is under consideration of another journal for publication. It has also not been presented in any other conferences in any form. This paper has been read and approved by all the authors. We confirm the requirements for authorship have been met, and that each author believes that the letter represents honest work. None of the authors have any competing interests with regards to this project. We thank you for your consideration of our article and look forward to hearing from you.

Introduction

COVID-19 pandemic has hit developing countries like India badly. Vaccination for medical personnel was started first with COVISHIELD (ChAdOx1 nCoV-19 Corona virus vaccine). Here we report a case of a vaccine related multiple sclerosis (MS) relapse with ChAdOx1 nCoV-19 Corona Virus Vaccine.

Case

A- 24-year-old lady doctor, took her first dose of COVISHIELD vaccine (ChAdOx1 nCoV-19 Corona Virus Vaccine (Recombinant) for SARS CoV 2 infection, on 15 January 2021 and second dose on 19 February 2021. On 24th February, she developed paresthesias in her left upper and lower limbs. She also had shock like sensation starting from both her inner thighs radiating up and down her spine while bending the neck. On the fifth day she was seen by an orthopaedic surgeon who advised pregabalin 50 mg bid for five days. As she was not better, an MRI of the spinal cord and brain with contrast was done and showed lesions in the brain and spinal cord consistent with MS. Two lesions in the brain and one in the spinal cord was enhancing. She was treated with IV methylprednisolone one gram per day for five days. Her symptoms subsided significantly by one week. Oral steroids was started at 60 mg and was reduced over few weeks. At six weeks she had improved 80% with mild distal paresthesias and persisting Lhermitte’s symptom. She had history of left facial numbness and left upper limb weakness in the past (Feb 2017), which improved over one week, without any evaluation or treatment. She was diagnosed MS in view of two episodes of neurological dysfunction four years apart (Dissemination in time) and multiple lesions on MRI in the brain and spinal cord (Dissemination in space) with a probable vaccine induced second relapse.

Discussion

This case is important as it is the first report of ChAdOx1 nCoV-19 Corona virus vaccine related MS relapse. Her second episode happened within one week after the second dose of the vaccine. The risk of vaccine induced reactivation of immune system resulting in MS relapse is not known especially with newer COVID-19 vaccines. Many studies in the past have shown that vaccination does not increase the short-term...
The risk of relapse in MS especially with tetanus, hepatitis B, or influenza vaccination (Confavreux et al., 2001). At this moment we are uncertain about the risk associated with different types of COVID-19 vaccine as they differ in their structure and mechanism of action. A recent study evaluated the risk of MS relapse with BioNTech COVID-19 (BNT162b2) vaccine. It was found that 2.1% had an acute relapse (8/388 vaccinated RRMS patients) within 10-19 days after the first vaccine dose and 1.6% (5/306), within 14–21 days after second vaccine dose. But 36 patients (6.5%) who had the first vaccine dose, and 57 patients (13.1%) who got the second vaccine dose were followed less than 14 days, hence the rate of acute relapse following the vaccine could be higher than reported. They compared the relapse rate with historical controls of the previous four years and found that relapse rates were not different in the vaccinated population (Achiron et al., 2021). Though statistically there is no difference in the relapse rate between vaccinated and non-vaccinated MS patients, the temporal association with vaccination and relapse suggest that vaccines may be activating the immune system in susceptible patients resulting in a relapse, though there absolute numbers may be less. We need larger epidemiological and focused immunological studies to know the true risk of COVID-19 vaccine induced MS relapses.

Declaration of Competing Interest

There is no conflict of interest for this work.

Funding

No funding was received for this project.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.nerep.2021.100006.

References

Confavreux, C., Suissa, S., Saddier, P., et al., 2001. Vaccinations and the risk of relapse in multiple sclerosis. N. Engl. J. Med. 344 (5), 319–326. doi:10.1056/nejm200102013440501.

Achiron, A., Dolev, M., Menasce, S., et al., 2021. COVID-19 vaccination in patients with multiple sclerosis: what we have learnt by February 2021. Mult. Scler. doi:10.1177/13524585211003476.