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Case Report

Guillain-Barre Syndrome Following Ad26.COV2.S COVID-19 Vaccine: A Case Report

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Abstract

Guillain-Barre Syndrome (GBS) has been reported as a rare side effect in the recipients of Johnson & Johnson®'s Janssen Ad26.COV2.S COVID-19 vaccine. We report a case of GBS in a 50 years old female following the administration of the aforementioned vaccine.

Key words: *COVID-19 Vaccines, Guillain-Barre Syndrome*

Introduction

Declared as a pandemic on March 11, 2020, Coronavirus Disease 2019 (COVID-19), has affected lives globally [1]. Many efforts were made to develop drugs, vaccines, and interventions to combat this disease. COVID-19 vaccines were effective in reducing infection, disease severity, and death and were subsequently approved for use. These vaccines have undergone rigorous testing and safety evaluation and are generally safe.In this case report we present a patient who developed GBS after being vaccinated with the Janssen COVID-19 vaccine.

Case presentation

A 50 years old lady developed bilateral lower limb weakness, associated with numbness and tingling sensation after about three weeks following immunization with Janssen COVID-19 vaccine. She had difficulty in walking, wearing slippers but could walk on her own.Her weakness was progressive and after about 10 days of initial symptoms, she needed walking assistance devices and also had a tingling sensation in her hands and proximal forearm. She consulted some faith healers but her condition did not improve and she was unable to walk on her own and presented in our hospital where a provisional diagnosis of GBS was made and was admitted. Her bowel and bladder habits were intact. There was no preceding history of respiratory or gastrointestinal illness. She had no previous illness and denied any history of headache, backache, fever, rash, toxins exposure.

She had normal vitals during the physical examination. The neurological examination of lower limbs was remarkable for decreased power of 3/5 in both limbs. There were no sensory deficits and the muscle group had normal bulk with no fasciculations. The muscle tone was reduced and the ankle and knee reflexes were absent bilaterally. The upper limb examination

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was unremarkable. There were no cerebellar signs. Cranial nerves were not involved. The basic metabolic panel (Table 1) ruled out other causes of lower limb weakness.

The Reverse-Transcriptase Polymerase Chain Reaction (rt-PCR) was negative for SARS CoV-2. The magnetic resonance imaging (MRI) of the brain and spinal cord was unremarkable and ruled out other structural causes for the disease. The lumbar puncture done showed elevated proteins with a normal leucocyte count i.e. albuminocytologic dissociation. The findings of the cerebrospinal fluid analysis are shown in table 2.

Table 1: Baseline lab values

Test	Value	Reference range
Hemoglobin	12.4	12-15 gm/dl
Total leucocyte count	8,900	4,000-10,000 cells/mm^3
Platelet	1,60,000	1,50,000-4,00,000 cells/mm^3
Sodium	141	135-145 mmol/l
Potassium	4.1	3.5-5.1 mmol/l
Creatinine	0.8	0.6-1 mg/dl
Creatine Phosphokinase	167	26-192 U/l
Human Immunodeficiency Virus	Negative	
Thyroid Stimulating Hormone	6.20	0.39-6.6 uIU/mL

The clinical symptoms, examination findings, and supporting CSF analysis suggested the diagnosis of GBS. The patient did not have respiratory symptoms and her weakness improved with physiotherapy during hospitalization. The patient did not require intravenous immunoglobulin or plasma exchange and the patient was subsequently discharged. She did not have residual symptoms when she was contacted after two months.

Table 2: Cerebrospinal Fluid Analysis (CSF) Report

Variable	Result	Reference Range
CSF for Protein	49	10-45 mg/dl
CSF for Total Count	4	0-5 cells/mm^3
CSF for Differential Count	All cells are lymphocytes	
CSF for Glucose	62	50-80 mg/dl
CSF Adenosine Deaminase	4	<10 U/l
CSF for Microorganism	Not Found	

Discussion

COVID-19 vaccines have undergone rigorous clinical trials and stringent safety surveillance and are generally safe with a few mild discomforts. Janssen COVID-19 vaccine is a viral vector recombinant vaccine based on human adenovirus containing the genes required for the synthesis of SARS-CoV-2spike proteins [2]. It was recommended for use by WHO on 12th March 2021 [3]. There were preliminary reports of 100 GBS cases among 12.5 million recipients of this vaccine as noted by the US Advisory Committee on Immunization Practices [4]. European Medicines Agency also issued a statement labeling GBS as a very rare side effect of the Janssen COVID-19 vaccine[5]. Similar to our case, the mean age and time to onset were 53.6 ± 12.4 years and 13.8 ± 9.8 days respec-tively in that report. In our case, there was no history of gastrointestinal and respiratory symptoms to suggest that GBS was precipitated by these pathogens. Although it cannot be definitely proved that her GBS was caused by the COVID-19 vaccination, the temporal relationship of the illness onset and the absence of other infectious triggers suggesta likely association between these two. GBS can occur following COVID-19 vaccination and the history of vaccination should always be inquired in the patients presenting with neurological symptoms.

Conclusion

GBS can occur following the Janssen COVID-19 vaccination and the history of vaccination should always be inquired in the patients presenting with neurological symptoms.

Conflicts of interests: None

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