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Case Report

A suspected case of COVID-19 vaccine (Covishield) induced Guillain Barre syndrome-a case report

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ABSTRACT

Guillain Barre syndrome (GBS) is a collection of clinical syndromes that manifest as an acute inflammatory poly radiculopathy. It usually presents as an acute, non-febrile, monophonic, post infectious illness manifesting as ascending weakness and areflexia. It is an autoimmune disorder characterized by production of antibodies against the myelin and is often triggered by bacterial and viral infections, vaccines against rabies, flu and COVID-19. Here we present a case of 31 years old male with characteristic signs and symptoms of GBS possibly triggered by Covishield vaccine.

Keywords: Covishield, COVID vaccination, GBS, Polyneuropathy

INTRODUCTION

GBS is an autoimmune ascending, usually demyelinating, motor>sensory, polyneuropathy accompanied by areflexia and motor paralysis. The incidence of GBS worldwide is 1.1-1.8 per 100,000 population and the incidence increases with increasing age with greatest risk among the persons over 50 years of age. In majority of cases, the antibodies produced damage the myelinated neurons by destroying Schwann cells of the peripheral nervous system and hence, result in the slowing of nerve conduction and ultimately paralysis. Sometimes, axonal degeneration without demyelination may occur. Apart from motor involvement, GBS can also cause sensory, autonomic and brainstem abnormalities. Here we presented a case of a middle-aged men who presented with ascending paralysis following first dose of Covishield vaccination.

Though many researches have not been done in this context, those done show very successful and safe profile of Covishield and other COVID vaccines. A study conducted by Silvari et al studied the adverse effects following Covishield vaccination in health care workers at TIMS, Chennai and published in International journal of health and clinical research concluded that majority of side effects were mild, self-limiting and of short duration.[1] Another similar study conducted by Kaur et al in studied the side effects of Covishield vaccine in 804 participants above 18 years of age and concluded that it has an overall safety profile with AEFI of grade 4 severity in only 1 and grade 3 severity in only 4 participants.[3] Also, the incidence of AEFIs was found to be higher in women as compared to men. Another International study conducted in England by Hippifley-Cox et al published in national library of medicine to study the association between AstraZeneca vaccinees and risk of thrombocytopenia and thromboembolic events among adults and it found increased risk of thrombocytopenia and venous thromboembolism after the vaccination.[2] Another similar study conducted by Kaur U et al studied the side effects of Covishield vaccine in 804 participants above 18 years of age and concluded that it has an overall safety profile with AEFI of grade 4 severity in only 1 and grade 3 severity in only 4 participants.[3] Also, the incidence of AEFIs was found to be higher in women as compared to men. However, the risk was substantially less in these vaccinees as compared to the COVID infected individuals. A case report by Finsterer et al shows that vaccination with a vector-based COVID-19 vaccine can be followed by exacerbation of GBS.[8]

CASE REPORT

A 31 years old male, resident of Liloni, Shamli, Uttar Pradesh presented to our emergency department on 31 August, 2021 with chief complaints of fever and body ache for 6 days and generalized weakness in lower as well as upper limbs for 4 days. He was a known case of poliomyelitis since his childhood. But was able to walk and do all his routine activities since his childhood. Patient also had pes caves since childhood.

The history of present illness revealed that the patient was apparently asymptomatic 6 days back (25 August 2021) when he got his first dose of Covishield vaccine administered in his village. One day after it, he developed an acute onset generalized body ache. It was associated with low grade fever, not recorded by the patient. Two days after, the patient developed weakness in his lower limbs as he was unable to walk to toilet even with support. The weakness gradually progressed to both upper limbs and was unable to grasp his hands and hold daily objects. Thereafter, patient noticed difficulty in swallowing as well.

Then he reached to his nearby health centre with complaint of quadriparesis from where he was referred to LLRM medical college on 31 August 2021 and was admitted in the emergency department.

On presentation, patient had complaint of inability to move all 4 limbs and breathlessness along with difficulty in swallowing since 2 days. He was afebrile with a pulse rate of 92 /min and blood pressure 130/86 mm Hg. His oxygen saturation was 95% on room air and random blood sugar was 112 mg/dl. General physical examination was unremarkable with no signs of pallor, icterus, cyanosis, clubbing, edema or lymphadenopathy.

Patient was well oriented to time, place and person at the time of examination. His detailed CVS, GIT and respiratory examination was unremarkable.

Detailed CNS examination of the patient revealed that the patient's mini mental status examination was within normal limits.

Table 1: Motor examination.

Inspection	
Palpation	There was visible atrophy of the left lower limb; tone: hypotonia was present in all 4 limbs; power: muscle power according to MRC grading was 1/5 in all the joints of upper and lower limbs; reflexes: the jaw jerk, tendon reflexes, abdominal reflexes and plantar reflexes were bilaterally absent

Sensory examination was within normal limits.

Cerebellar system examination revealed normal finger nose test and dysdiadochokinesis.

No abnormal movements appreciable.

He was subjected to various haematological, CSF and radiological investigations. His haematology showed mild leucocytosis and raised SGOT, SGPT values. CSF examination revealed presence of 5 cells/cubic mm with 100% mononuclear cells. CSF protein was 58.9 mg/dl and glucose were 90 gm/dl. MRI spine showed postero-central and left paracentral disc bulge in L2-L5 spinal segment indenting the thecal sac and causing mild compression of existing nerve roots.

Based on the history, examination and investigation findings, a final diagnosis of Covishield vaccine induced GBS was made.

The patient was treated as per the treatment protocol for GBS. He was administered IVIG 2 mg/kg in divided doses over a period of 5 days and injection methylprednisolone 1 gm in 500 ml NS IV over 1 hour for 5 days. Additionally, the patient was taking calcium, viamin D and vitamin B12 supplements. Regularly monitored physiotherapy was being provided for the last 4 weeks.

Course during hospital stay

Patient was well responsive to the pharmacological and physio therapy and he was showing signs of improvement. The power of muscles (according to MRC grading) improved from 1/5 on 31 August to 3/5 on 10 September 2021 to 4/5 on 25 September following treatment 4 weeks post COVID-19 vaccination. Patient was discharged on 30 September 2021.

Now patient was in our follow up and was now able to walk with support and had now regained the same functional capacity as before COVID-19 vaccination. He used to walk with support due to right lower limb poliomyelitis.

Figure 1: Patient's recovery after 4 weeks of hospital admission'.

DISCUSSION

With the mass vaccinations campaigns taking place all across the globe more and more cases of vaccine induced GBS were being reported worldwide. This may lead to vaccine hesitancy. Post Covishield vaccination cases have been sparsely reported. Our case study showed that even if this rare complication did occur timely intervention and appropriate treatment can help the patient recover. Our study gave doctors as well as the general public reassurance that the benefits of COVID vaccination still largely outweigh the risks and hence can help reduce vaccine hesitancy. Previous studies done by Silvery et al, Kaur et al and the statistics assessed on official government COWIN portal also supported our inference that COVID-19 vaccination had a very high benefit-risk ratio and was thus recommended.[1,2,10]

CONCLUSION

Our case report shows that Covishield vaccination can trigger the occurrence of GBS in a previously healthy individual. Such isolated events when reported by the media cause panic among the general community and increase vaccine hesitancy among the people. Our study helps to establish the fact that with proper diagnosis and management even if an adverse event does occur it can be treated successfully.

However, the adverse effects following immunisation are very rare as evidenced by the number of cases reported worldwide compared to the number of individuals vaccinated all over the world. Any such suspected adverse events warrant further detailed investigations to establish them as AEFI (adverse event following immunization). At present, the benefit of COVID-19 vaccinations seems to outweigh the risks hence vaccine hesitancy should be discouraged and maximum possible vaccination coverage should be encouraged in the general population.

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