Guillain Barré Syndrome Following COVID-19 Vaccine

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Introduction

Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus, coronavirus family, it caused atypical pneumonia called a severe acute respiratory syndrome.[1]

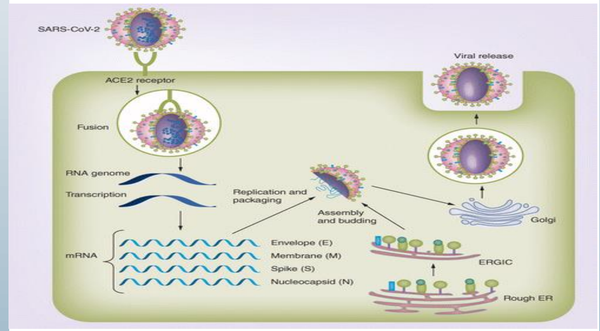

Figure 1. **SARS-CoV-2 life cycle.**

COVID-19 is caused by the SARS-CoV-2 which was first detected in Wuhan, China in 2019.[2] Guillain-Barré syndrome (GBS) is a collection of clinical syndromes that manifests as an acute inflammatory polyradiculoneuropathy with resultant weakness and diminished reflexes. it develops a sign and symptoms of Facial droop, Ophthalmoplegia, paresthesia, numbness, or similar sensory changes. is caused by respiratory infections, gastrointestinal infections, and vaccinations.

pathophysiology of this syndrome is unclear, molecular mimicry and immune-mediated phenomena may be suggested.[2]

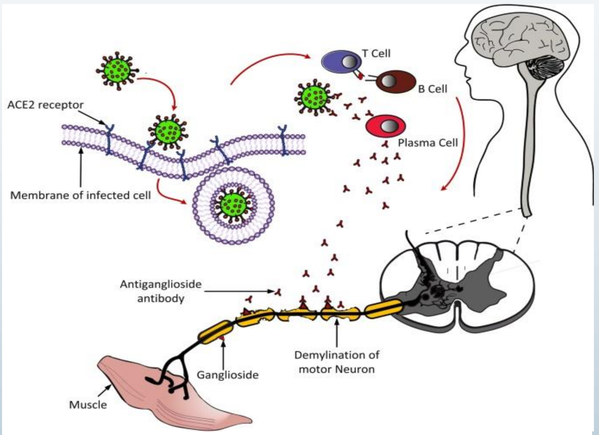

Figure2. GBS pathophysiology.

GBS could be an extremely rare complication of the COVID-19 vaccines, but the benefits of the currently approved vaccines significantly outweigh their risks.

Literature reviews

By using four paper.

Discussion

Table1. reporting rate of GBS for mRNA vaccine and janseen vaccine in the US.

Crude comparison with mRNA vaccines

COVID-19 Vaccine	VAERS reports with GBS screening*	Doses administered	Crude** VAERS GBS reporting rate per million doses administered
Janssen	100	12,235,978	8.1
Moderna	162	134,076,668	1.21
Pfizer-BioNTech	190	181,347,436	1.05

VAERS reports processed through June 30, 2021

the first case was a 62-year-old female with no history of recent infection, receive Oxford/AstraZeneca COVID-19 vaccine, medical history of bronchiectasis, and osteoporosis.[3] The second case was an 82-year-old female with no history of chronic illness.[4] She received the Pfizer vaccine. The third paper is taken from a 48-year-old male with a history of dyslipidemia who received the Vaxzervria vaccine, which temporarily caused GBS.[2]

The last paper reported four cases aged between 50 and 60 years old all cases received the AstraZeneca vaccine, Different chronic diseases were recorded for each case, ulcerative colitis osteoarthritis, and hypertension.[5]

Most of the previous cases have chronic diseases, and the period of their infection with GBS is close to the period of their taking the vaccine, this indicates the possibility of their infection with GBS may be due to antibodies that formed against the vaccine. All of the above-mentioned cases were of the elderly (60 years and over).

all of the previous vaccines are approved and cause GBS, while There are vaccinations, that are not approved but have no reported case of GBS.

Conclusion

there is a link between the COVID-19 vaccine and GBS but it is rare. Elderly people should be alerted of the possibility of GBS, and Inform them of any recommended vaccinations for them

A surveillance system should be established to monitor the elderly who receive the vaccine and to record and follow up with people who have been infected with GBS after vaccination.

more association studies are required to establish this theory.[2]

References

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