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Guillain Barre Syndrome – A New Danger That Lurk With Certain Covid-19 Vaccine Administration

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ABSTRACT
Guillain-Barré syndrome (GBS) is a rare inflammatory nervous disorder associated with numerous viral infections where the body immune system attacks nervous system causing muscle weakness and even paralysis. Recently, there are many notifiable cases reporting that there is an association between coronavirus disease-2019 (COVID-19) and GBS, but the strength of the association of GBS was not yet found. In this article after reviewing many articles published on GBS and it's association with COVID-19 it is to summarize that the age (59 years) and gender (65% male) is also to be considered along with COVID-19 vaccination as they also appeared to reflect the association of GBS with COVID 19 vaccination. The time gap between the occurrence of GBS symptoms from the time of COVID-19 symptoms was found to be 11 days.
Keywords: Guillain-Barre syndrome; neurological diseases; SARS-CoV-2 virus; coronavirus, COVID-19;

I. INTRODUCTION:

Unfortunately, while COVID –19 vaccines have been certified effective there have been some side effects observed as well.

FDA added a note of warning with the use of Johnson and Johnson's Jannsen noval one dose vaccine after some cases of neurological complications. FDA considered almost 100 cases of GBS in people who had been vaccinated with single dose COVID vaccine shot in USA before issuing the warning.

GBS is a rare nervous disorder where the body immune system attacks nervous system causing muscle weakness and even paralysis. GBS is now considered as serious life-threatening adverse reaction with Johnson and Johnson COVID-19 vaccine.

As per WHO GBS attacks nerves that control muscles sensation touch and neurotransmissions. Since GBS is being triggered off by vaccines, experts are now weighing the risk of COVID 19 vaccines posed to people.[1]

STATISTICS:

Out of 13 Lakhs people inoculated with noval single dose vaccine 95 of 100 cases were found serious with death recorded. Not only Johnson and Johnson recently the Oxford – AstraZeneca vaccine (Marked as Covi Shield in India) was linked to neurological damages.7 cases from Kerala and 4 from Nottingham of India and UK respectively were recorded.[1]

Frequency of GBS in India and England was estimated to be 1.4 to 10 times greater than expected. identified 279 (59 J&J, 97 Moderna, 121 Pfizer, 2 unknown) reports that explicitly specified GBS in the symptom field of the VAERS (Vaccine Adverse Event Reporting System) Submission following COVID vaccination.[2]

ASSOCIATION OF GBS WITH COVID-19 VACCINES

As GBS is an autoimmune reaction upon infection threat (or infections mimicked by vaccine) the WBC and antibodies put in charge to protect body mistakenly attacks healthy cells. It is to be noted that GBS is not contagious and rarely hereditary.[1]AstraZeneca vaccine is considered to be adenovirus based with embedded spike proteins as that of J&J/Janssen COVID-19 vaccine.

From the collected epidemiological data, it is expected to be less than 4 GBS cases per month in the taken population.[3]A systematic review of SARS-CoV-2–associated GBS found 3 of 42 cases (7.1%) were bifacial weakness with paresthesias variant, which is higher than previous estimates.[4] The largest case series of this variant to date showed it was more likely to be associated with

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upper respiratory tract infections than "typical" GBS.[5]

Cerebrospinal fluid, when assessed, demonstrated albuminocytologic dissociation in 76% of patients[6]

The causality could be due to a cross immune response to SARS-CoV-2 spike protein and components of the peripheral immune system and these symptoms are temporally associated with vaccination[-2] It was observed that about 2 weeks after the vaccine shot there is a marked bilateral facial and appendicular weakness.[2]The mean age (59 years) and gender (65% male), also appeared to reflect the occurrence of GBS.[6]

As discussed before the development of a postvaccination neurological syndrome, could be as a result of host antibodies production that cross-reacts with proteins present in peripheral myelin. These antibodies might be due to direct response to the SARS-CoV-2 spike protein, but a less specific immune response. There is an evidence that the SARS-CoV-2 spike protein can bind to sialic acid–containing glycoprotein and gangliosides on cell surfaces, increasing its viral transmissibility.7 Antibody cross-reactivity between the SARS-CoV-2 spike protein and peripheral nerve glycolipids may be involved in the pathogenesis of GBS associated with immunization or SARS-CoV-2 infection. The specific genetic background of the host, the human leukocyte antigen haplotype profile, may also play a role, as it does in SARS-CoV-2–associated GBS and other autoimmune neurological disorders.[8]

POSSIBLE TREATMENT AS OF NOW:

When patients are tested for Serum antiganglioside antibodies, they were almost absent in 15 of 17 patients. Many patients were treated with a single course of intravenous immunoglobulin, and this provided a remarkable improvement within 8 weeks in most cases.

II. CONCLUSION:

Knowledge of this potential and rare neurological complication is important for physicians to know, such that it cannot diminish the widespread use of the AstraZeneca or J&J vaccines as many millions more receive them in the coming months and years and these vaccines are of utmost importance for eradicating the widespread of COVID-19. Future investigation should be done and compare patients with COVID-19-associated GBS to those of contemporaneous non-COVID-19 GBS patients and determine if the incidence of GBS is elevated in those with COVID-19.

In a nutshell, to assess causality vigilance is suggested for cases of bifacial weakness and the data related to GBS following vaccination for SARS-CoV-2 and the postvaccination surveillance programs and the data comparisons with the non-covid GBS patients for robust data collection ensuring the safety of COVID-19 vaccines

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Primary Source

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