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Common variant of GBS and its relation to age group and its gender distribution in our local population of Khyber Pakhtunkhwa

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***Abstract*---**Aim: To establish the most common variant of GBS among patient attending Kuwait teaching hospital. Material and Methods: The data was collected manually through data collection tool specially designed for the study. Our sample size was 103. The sampling technique was non probability convenient sampling. This study was a cross-sectional analysis of study conducted from (Jan-2017--Jan-2021) at Kuwait teaching Hospital, Peshawar, which is part of the comprehensive healthcare network. Results: A total of 103 cases of all age groups and both gender were included in our study. The most common variant was AMSAN (48.5%) followed by AIDP (31.1%). And the frequency of AMAN was 20.4%. The most common affected age group was 14 and younger (44.7%) followed by adults (26 to 65) which was 42.7%. Conclusion: We conclude from this study that, AMSAN is most common variant of GBS. Most commonly affected age group is 14 and younger. The prevalence of GBS is more in male.

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Introduction

The inflammatory disease Guillain-Barre syndrome (GBS) of the peripheral nervous system (PNS) is the primary cause of acute flaccid paralysis, having an estimated incidence of 1-2 per 100,000 person-years worldwide [1]. Evidence of PNS dysfunction and differentiation between GBS subtypes such as acute inflammatory demyelinating polyradiculoneuropathy (AIDP), acute motor axonal neuropathy (AMAN), and acute motor sensory axonal neuropathy (AMSAN) can be obtained using electrophysiological tests [1].

All age groups are susceptible to developing GBS, but younger people are often afflicted more often. While there is a consistent pattern in which patients with GBS first experience weakness and sensory changes in their legs before they spread to their arms and ultimately their cranial muscles, the disease can manifest itself in a wide variety of ways and there are multiple discrete clinical variations [2,3].

Examinations of the patient's history, nervous system, electrophysiology, and CSF are used in the diagnosis of GBS. In order to diagnose GBS, it is necessary to rule out other diseases with comparable clinical presentations [4]. Evidence of PNS dysfunction and the ability to differentiate between the three subtypes of GBS (acute inflammatory demyelinating polyradiculoneuropathy, acute motor axonal neuropathy, and acute motor sensory axonal neuropathy) can be gleaned from electrophysiological tests [5-8]. The disease can spread rapidly; most people with GBS achieve their maximal level of impairment in less than two weeks. About 20% of people with GBS require mechanical ventilation due to respiratory failure. Dysfunction of the autonomous nervous system can lead to cardiac arrhythmias and unstable blood pressure [9]. The mortality rate for GBS is approximately 3-7% [10]. Although 40% of those receiving treatment were admitted to rehabilitation institutes, there was a wide range of short- and long-term problems and considerable morbidity [11].

GBS affects individuals of all age range, and is considered as rapidly systematic ascending weakness. Due to paucity of literature on this, the goal of this study is to determine the most common variant of GBS in patient presenting to Kuwait teaching hospital. In light of the fact that there are treatment options in the manner of plasmapheresis and intravenous immunoglobulins that are just as effective, it is essential to diagnose GBS and any of its variants at earliest.

Methodology

The data was collected manually through data collection tool specially designed for the study. Our sample size was 103. The sampling technique was non probability convenient sampling. This study was a cross-sectional analysis of study conducted from (Jan-2017--Jan-2021) at Kuwait teaching Hospital, Peshawar, which is part of the comprehensive healthcare network. Ethical

clearance of this study was taken from the hospital Review Board, no identifying information was collected from patients.

Patient of all age group with both genders, who presented with acute paralysis and were subsequently diagnosed with a specific form of GBS were included. After a thorough physical examination and diagnostic testing, including nerve conduction studies, cerebrospinal fluid analysis, magnetic resonance imaging (MRI) were performed, and the diagnosis of GBS was verified. Two researchers from the study read the diagnostic reports and verified the data. Diseases which includes botulism, transverse myelitis, myasthenia gravis, and myositis, which can also cause sudden paralysis, were ruled out. Gender, age in years, GBS classification were documented. Data on the patient's physical condition, diagnostic testing, and treatment were gathered. Date analysis was performed using SPSS v.25.

Results

A total of 103 cases of all age groups and both gender were included in our study. The most common variant was AMSAN (48.5%) followed by AIDP (31.1%). And the frequency of AMAN was 20.4%. The most common affected age group was 14 and younger (44.7%) followed by adults (26 to 65) which was 42.7%. The youth (14 to 25) and seniors (65 and above) were least affected age groups percentage equitant to 7.9% and 4.9% respectively. Among gender of all age groups male were more sufferer then female.

Table 1: Age Distribution

Age Distribution	Frequency	Percentage
under14	46	44.7
14-25	8	7.8
26-65	44	42.7
65 and above	5	4.9
Total	103	100

Table 2: Gender distribution

Gender	Frequency	Percentage
Male	58	56.3
Female	45	43.7
Total	103	100.0

Table 3. GBS variant

GBS Variants	Frequency	Percentage
AMAN	21	20.4
AMSAN	50	48.5
AIDP	32	31.1
Total	103	100

Discussion

In our study AMSAN (48.5%) was the most common type of GBS, however AMSAN was reported in a previous study in Saudi Arabia (28.6%) [12]. Our results showed an approximate statistics as that conducted in china, that the most common variant is AMSAN. However the second common variant in this study was Millar fisher the results does not support our statistics here the second common variant is AIDP [13] in our setup, unfortunately no such studies are performed in our local population that's why we cannot compare the results with local statistics. The age group affected most commonly in our study was under 14 the results are comparable with study conducted in Iceland [14].Males were more sufferer then female. The results does not match with international statistics [14].

While GBS accounts for the vast majority of instances of acute flaccid paralysis in children, it is much less common in children than it is in adults. Among young children, those between the ages of one and four were the hardest hit [15]. The annual incidence rate in Europe was 1.70 per 100,000 people [16]. The annual incidence was found to be 0.4 per 100,000 in one study of youngsters younger than 16 years old [17]. Few epidemiological studies have been conducted on GBS in Asia, however it is believed that there may be regional variances in the prevalence of the disease's many subtypes [18]. Comparatively, the prevalence of AIDP in two Far Eastern settings was significantly greater than the prevalence observed here (18/49; 17.9% vs. 6/30; 66.7% and 323/661%, respectively). Patients in this environment who reported symptoms of GBS had a mean age of 8.594.99 years [19]. The advantage of our study is that there is no such study performed in our local population this study can be used for further studies, and our sample size is small the results cannot generalized on all population. Further studies are needed at large scale to find out the exact relation.

Conclusion

We conclude from this study that, AMSAN is most common variant of GBS. Most commonly affected age group is 14 and younger. The prevalence of GBS is more in male.

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