

FREQUENCY OF SENSORY SIGNS AND SYMPTOMS IN GUILLAIN BARRE SYNDROME PATIENTS PRESENTING TO A TERTIARY CARE HOSPITAL.

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ABSTRACT

OBJECTIVE: To determine the frequency of sensory signs and symptoms in GBS (Guillain Barre Syndrome) patients, presenting to a tertiary care hospital. **DESIGN:** Descriptive cross sectional study **PATIENTS AND METHODS:** This study was conducted in department of Neurology, Jinnah Postgraduate Medical centre, Karachi. Total of 105 GBS diagnosed cases were included in this study. A thorough history was taken. The focus was on presence of sensory signs and symptoms in GBS patients and all the information was entered in the proforma. **RESULTS:** There were 60(57.14%) male and 45(42.86%) female. Sensory symptoms were widely prevalent pain 44.8%(47/105), paresthesia 81%(85/105), impaired pain and temperature sensation, 26.7%(28/105), impaired joint sensation 28.6%(30/105), impaired vibration sensation 22.9%(24/105) and electrophysiological sensory abnormalities 59%(62/105). **CONCLUSION:** Pain in GBS is an important treatable symptom which is often overlooked. Tactile appearances in GB disorder are regularly under-perceived and under-stressed. This examination broke down the development and the profile of agony and paresthesia in GB disorder during hospitalization. Information, particularly about development of torment and paresthesia during hospitalization may improve understanding and patient consideration.

KEYWORDS: Guillain Barre Syndrome, Paresthesia, Impaired joint sensation, impaired vibration sensation

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INTRODUCTION

Guillain Barre Syndrome (GBS) is a rare disorder in which body's immune system attacks the nerves.^{1,2} The most negligible symptom is pain in keeping with context of weakness. So, concerning the importance and severity of pain there are a few kinds of agony saw in GBS³ yet the pathophysiology of torment isn't distinct. Irregularities saw in the detailed recurrence of torment, and studies decided agony just in the extreme phases of GBS. Patients with the Miller Fisher condition (MFS) additionally announced the torment, intense engine axonal neuropathy (AMAN), and surprisingly gentle types of GBS^{4, 5}. Pain is the most common presenting feature occurring in patients suffering from GBS.⁶ Frequency and nature of pain in GBS seeks attention in this study. The studies conducted earlier emphasized on the nature of electrophysiological studies.⁷ Movement of GBS is for the most part more than 2 to about a month. At any rate half of patients arrive at a nadir by about fourteen days, 80% by 3 weeks and 90% by about a month⁸.

Although keeping in view pain was a common presenting feature in several retrospective studies on GBS⁹. Pattern of pain and categorical presentation is often misdiagnosed. Despite

concerned and helpful measures, such as the use of air mattresses, careful turning of patients and positioning palsies, uncontrolled pain can occur. Consecutive patients presented with clinical signs and symptoms of pain. They described low back and proximal leg pain of muscular origin in 55% of their patients in the illness and majority of these symptoms were evident by the first month of illness. Another study conducted in 2015, headache was uncommonly reported, whereas backache and extremity was observed more¹⁰. Character, intensity, and frequency of pain in GBS and the response to treatment are the parameters included in this prospective longitudinal study. Pain 50%, paresthesia (75%), impaired pain and temperature sensation (13.3%), and impaired joint sensation (23.3%), impaired vibration sensation (18.3%) and electrophysiological sensory abnormalities (58.3%)⁷. These features are to be given supreme importance while evaluating patients suffering from GBS.

First presenting symptom in GBS is pain and it can last up to one year and contributes to morbidity^{12, 13}. Therefore, this need to be addressed and properly managed early in the course of the disease. The threshold of signs and symptoms may vary keeping in view of

occupational, racial, environmental, eating habits and life style differences between local population and international community, therefore it is supreme to determine the frequency of sensory signs and symptoms in GBS (Guillain Barre Syndrome) patients, presenting to a tertiary care hospital, Karachi.

MATERIAL & METHOD:

This descriptive cross-sectional study was conducted from December 2016 to June 2017 at the department of Neurology, Jinnah Postgraduate medical Center, Karachi. All 105 patients of both genders of more than 16 years and less than 65 years with signs of less than or equal to 4 weeks of symmetric ascending paralysis (weakness) in more than one extremity and areflexia (loss of tendon reflexes assessed clinically) and confirmed on presence of both of following: 1) Albuminocytological dissociation (elevated cerebrospinal fluid protein > 0.55 gm/liter with normal cerebrospinal fluid cell count (< 10 cell/mm³) and 2) Positive nerve conduction studies which is characterized by reduced conduction velocity, conduction block, absent or reduced muscle action potential amplitude with preserved conduction velocity were considered positive for GBS and also with symptoms of Pain (Vas Analogue Scale [VAS] from 0 to 10, was used to assess pain. VAS more than 3 was taken as pain, Paresthesia (presence of numbness, tingling or burning in the fingers, hands, toes or feet), Impaired pain and temperature sensations (absence of pain or applying pin prick stimulus to patient was taken as impaired pain whereas inability of patient to differentiate between hot and cold test tubes when applied to patients' body was taken as impaired temperature sensation), Impaired joint sensation (Inability of patient to recognize the correct position of big toe in lower limbs or that of the middle finger in upper limbs when he/she asked to do so, while eyes closed, was taken as impaired joint sensation), Impaired vibration sensation (Loss of sense of tuning fork vibration as assessed by the patient but not by the examiner was taken as impaired vibration sensation) were included in the study. Patients with diabetes mellitus, chronic kidney disease, history of any chronic illness or malignancy before the onset of GBS, already being treated for patterns of pain and cardiac problems, longer movement of manifestations and signs, especially if more than about two months, patients with CSF pleocytosis of in excess of 10 lymphocytes/mm³ especially with cell checks more noteworthy than 50/mm³, those with history of hexacarbon abuse (on basis of history of exposure, patients who were industrial workers like in factories of paints, glue, batteries and solvents, those with abnormal porphyrin metabolism (patients with history of abdominal pain, seizures, psychosis and hyponatremia), those with history of Diphtheria infection (patients with history of dysphagia, odynophagia, painful neck swelling weeks before the onset of weakness), those with history of Botulism (excluded on the basis of history of descending paralysis and evidence of

neuromuscular pathology on electro diagnostic studies), those with Poliomyelitis (excluded on typical picture of monoparesis and/or electro diagnostic studies), those with Toxic neuropathy (excluded on basis of exposure to toxins like farmers working exposed to pesticides in fields, history of organophosphate ingestion and presence of skin lesions on extremities) were excluded from the study.

Informed consent was taken from the patients, and looked into an ethical board the institution. Sample size was calculated using OpenEpi sample size calculator by taking expected prevalence of 13.3%¹¹, confidence level 95% and desired precision of 6.5%, the determined example size was 105.

Nonprobability sequential testing method was applied to collect the samples. The information was collected on an endorsed poll with respect to segment factors like name, age, gender, habitation, and span of illness.

The data was analyzed on SPSS version 18.0. The age and duration of disease was expressed in Mean±SD values. Gender, residence, smoking status, Tobacco less smoking status and outcomes (pain, paresthesia, impaired pain and temperature sensation, impaired joint sensation, impaired vibration sensation) was presented as frequencies along with percentages. Effect modifiers age, residence, duration of disease smoking status and Tobacco less smoking status was controlled through stratification. Post stratification chi-square test applied to observe their effect on the outcome variables. Statistical significance was considered at P-value≤0.05.

RESULTS

Total of 105 GBS diagnosed cases were included in this study. The average age of the patients was 50.07±9.35 years and mean duration of disease was 2.02±0.65 weeks (table 1). There were 60(57.14%) male and 45(42.86%) female as shown in figure 1. Out of 105 cases, 50(47.62%) were smoker and 36(34.29%) were observed with tobacco less smoking status. Frequency of sensory signs and symptoms in GBS (Guillain Barre Syndrome) patients are reported in Table 2. Sensory symptoms were widely prevalent pain 44.8%(47/105), paresthesia 81%(85/105), impaired pain and temperature sensation, 26.7%(28/105), impaired joint sensation 28.6%(30/105), impaired vibration sensation 22.9%(24/105)and electrophysiological sensory abnormalities 59%(62/105).

Stratification analysis was performed and observed that pain and impaired vibration sensation was significantly high above 50 years of age patients as compare to below and equal to 50 years of age patients. Stratification of gender was also performed and observed that electrophysiological sensory abnormalities was significantly high in male as compare to female (p=0.010). It was also observed that there were Frequency of sensory signs and symptoms in GBS were not statistically significant with respect to residence, duration of disease, smoking and tobacco less smoking status.

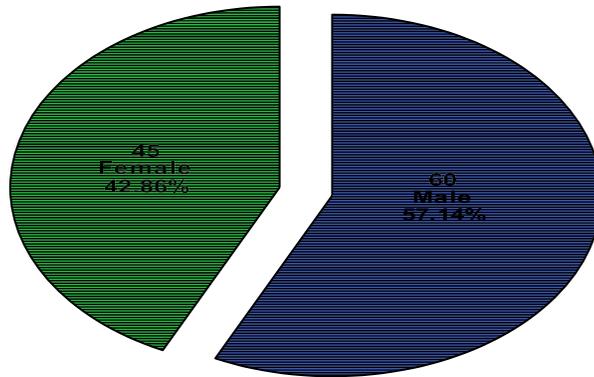


Figure 1: Gender distribution of patients (n= 105)

Table 1: Descriptics statistics of age and duration of disease (n=105)		
Statistics	Age (Years)	Duration of Disease (Weeks)
Mean	50.07	2.02
Std. Deviation	9.35	0.65
95% Confidence Interval for Mean	Lower Bound	48.26
	Upper Bound	51.88
Median	52	2
Interquartile Range	11	0
Minimum	25	1
Maximum	64	3

Table 2: Frequency of sensory signs and symptoms in patients with GBS		
SENSORY SIGNS AND SYMPTOMS IN GBS	COUNT	PERCENT
Pain	47	44.8%
Paresthesia	85	81.0%
Impaired Pain And Temperature Sensation	28	26.7%
Impaired Joint Sensation	30	28.6%
Impaired Vibration Sensation	24	22.9%
Electrophysiological Sensory Abnormalities	62	59.0%

DISCUSSION

Characteristic feature of Guillain–Barre syndrome (GBS) include symmetrical motor weakness of more than one limb usually progressive in nature. There is associated areflexia and electrophysiological and pathological features of demyelination as well¹⁴ But recent studies came to conclude that GBS has wide spectrum of clinical, electrophysiological, and pathological subtypes.¹⁵ There is a variable presentation of disease as for example one group of population presents with acute sensory neuropathies while the others present with different clinical symptoms and other neurophysiological properties. Group of patients presenting with

pure acute sensory neuropathy and electrophysiological evidence of demyelination in motor and sensory fibers have been purely classified as acquiring “sensory GBS.”¹⁶⁻¹⁸

Variable tangible side effects, engine inability, need for hospitalization and vulnerability of the course of the infection are the fundamental key highlights of GB condition; the phenotypic portrayal in any case is like the announced writing.¹⁹⁻²²

In this study the average age of the patients was 50.07 ± 9.35 . There were 60(57.14%) male and 45(42.86%) female. In Karkare et al study⁷ means age 32.75 ± 12.9 years, and 46 (76.7%) men and 14 (23.3%) women.

Most common presenting symptom in GBS is pain. However pain disturbances in GBS are not widely discussed. The pattern of distribution of symptoms include, pain 44.8%, paresthesia 81%, impaired pain and temperature sensation, 26.7%, impaired joint sensation 28.6%, impaired vibration sensation 22.9% and electrophysiological sensory abnormalities 59%. Similar result was also reported in Karkare et al study. This study elaborates sensory symptoms including pain 50%, paresthesia(75%), impaired pain and temperature sensation(13.3%), impaired joint sensation(23.3%), impaired vibration sensation(18.3%) and electrophysiological sensory abnormalities(58.3%)⁷.

The explanation for expanded commonness of tangible indications in this investigation is because of two variables: every day assessment for ten continuous days from the day of confirmation and explicit enquiry about tactile signs. Patients who gave tactile brokenness experienced agony, disabled personal satisfaction, and surprisingly helpless rest, while engine capacities were not debilitated. Takeuchi et al.,²³ had detailed expanded recurrence of leftover shortfalls in patients with sensation impedance. Clinical assessment of tangible brokenness has been accounted for to change somewhere in the range of 59% and 66%.^{22, 24} Ruts et al.,²⁵ recently portrayed 156 patient's disorder and announced agony fourteen days going before shortcoming in 36% of patients, in 66% of patients in the intense stage (initial three weeks after incorporation), and in 38% of patients following one year. 60-96% of the tried nerves gave significant outcomes in electrophysiological study.²⁴

CONCLUSION

Pain in GBS is an important treatable symptom which is often overlooked. In this study most common frequency of sensory signs and symptoms in GBS patients are paresthesia, electrophysiological sensory abnormalities, and pain. Tactile appearances in GB condition are regularly under-perceived and under-stressed. This investigation examined the advancement and the profile of torment and paresthesia in GB disorder during hospitalization. Information, particularly about advancement of torment and paresthesia during hospitalization may improve understanding and patient consideration.

ETHICS APPROVAL: The ERC gave ethical review approval

CONSENT TO PARTICIPATE: written and verbal consent was taken from subjects and next of kin

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