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Research Article

Clinical profile of Guillain Barre syndrome in a tertiary care centre

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ABSTRACT

Background: This study was done to know about the clinical profile of Guillain Barre syndrome in a tertiary care centre and to correlate certain clinical features with outcome at discharge and thereby to identify a poor outcome group in early stages.
Methods: 33 patients admitted in the medical wards were included in the study based on the diagnostic criteria modified by Asbury. Detailed history and physical examination as per a structured profroma was taken and necessary lab investigations were done including CSF study and electrodiagnostic study.
Results: The factors affecting the outcome at discharge were 1. Requirement of mechanical ventilation 2. Features of axonopathy in electrodiagnostic studies 3. Decreased CMAP (<10% of lower limit of normal) 4. Presence of cranial nerve involvement 5. Presence of autonomic involvement.
Conclusion: There is a high percentage of Miller Fisher variant of GBS this study. Older age is not found to have adverse effect on outcome at discharge in this study. Axonal variant of GBS is found to have a bad outcome. Requirement of mechanical ventilation was found to be a factor adversely affecting outcome. Cranial nerve involvement and autonomic involvement adversely affects the outcome at discharge.

Keywords: Guillain Barre syndrome, Miller Fisher syndrome, Electrodiagnostic study

INTRODUCTION

Guillain Barre Syndrome (GBS) has an incidence of 0.4 to 1.9 per 100,000 populations. GBS can occur at any age. The male to female ratio is 3:2. It is characterized by an acute onset, relatively symmetric, predominantly motor, flaccid, areflexic paralysis which evolves over a period of up to 4 weeks. History of antecedent viral infection, vaccination or surgery may be obtained in 50 to 70% of cases. There can be accompanying cranial nerve involvement: Facial (60%), bulbar (30%) or ocular (10%) palsies and respiratory failure in 10-30% of cases. Papilloedema may occur in one percent of cases.

GBS is a self-limiting monophasic disorder and good recovery occurs in 70-80% cases. Seven percent are left with severe motor handicap. Immediate mortality is around 4-13%. GBS variants include Miller Fisher syndrome, pure sensory syndrome, pan-dysautonomia, pure axonal form, and recurrent GBS. Cerebrospinal fluid (CSF) examination classically shows albumino-cytological dissociation. Motor nerve conduction studies may reveal prolonged distal latency, reduced motor nerve conduction velocity, conduction block and prolonged or absent F waves in two or more nerves. Sensory conduction can be abnormal in 60% of cases. Immunomodulation with plasma exchange or Intravenous Immunoglobulin (IVIG) has been used to enhance recovery in selected group of patients.

The study was undertaken to know about the clinical profile of GBS in a tertiary care hospital and to correlate

certain clinical features with outcome at discharge and thereby to identify a poor outcome group in early stages.

METHODS

All patients who were diagnosed as GBS fulfilling the diagnostic criteria as modified by Asbury,[1] admitted into the medical wards of a tertiary care centre during a period of 24 months were included in this study. During the study period 33 patients who fulfilled the diagnostic criteria were identified and included in the study.

A detailed history with particular attention to the date of onset of neuropathic symptoms and the tempo of the ensuing functional disability and time taken to reach clinical nadir was elicited. Any significant past history and a history of any preceding event within a period of one month prior to onset of symptoms was noted.

A detailed clinical examination as per a structured proforma was done at the time of admission, at the time of clinical nadir and, at the time of discharge. Also patient was examined for any improvement or worsening of muscle power every alternate days and the duration of plateau phase and the time taken to reach clinical nadir was noted.

Muscle weakness was assessed with Medical Research Council grading system. Disability was assessed with Modified Disability Grading Scale for GBS (modified from Hughes RAC et al. 1978).[2] Bedside autonomic tests like resting heart rate, resting blood pressure, postural hypotension, blood pressure and heart rate changes at the end of 2 minutes on standing from lying position, blood pressure changes with hand grip, heart rate changes with 6 deep breaths were performed at the time of admission, time of peak disability and at the time of discharge. In addition complaints suggestive of autonomic dysfunction such as excessive sweating, urinary retention and constipation were also noted.

Laboratory investigations included ESR, HBsAg and HIV serology. Cerebrospinal fluid examination was done in all patients and albuminocytologic dissociation was noted (value more than 45 mg% taken as raised protein). Nerve conduction tests were performed in all possible patients and features of axonal involvement were noted.

All patients were admitted and treated with intravenous immunoglobulin (IVIG) for 5 days whenever it was indicated. Mechanical ventilation was provided when required. Time taken to reach peak deficit, latency period to start IVIG, duration of plateau phase, the requirement and duration of ventilatory support and nature of complications were noted.

Patients were divided into two separate groups on the basis of disability at discharge. Patients who failed to improve by at least one clinical disability grade or those who improved after duration of one month hospital stay were included as a poor outcome group and good outcome group respectively. The two groups were compared and the various factors affecting the outcome at discharge were noted. Possible associations were analysed by statistical methods including mean, standard error of mean values, Fisher's one tailed tests or chi-square tests and P values were calculated.

RESULTS

Mean age group of the study population was 36.5years. Maximum percentage of patients was in the age group of 21-30 and 3l-40, each having 21.2%. 75.8% cases were males and 24.2% cases were females. There is an increased occurrence of GBS during the month of July and August. 11out of 33 (33.3%) cases occurred during that time. Average duration of hospital stay in the study group was 20.8 days. There were preceding events in l6 cases (48.5%). Most common preceding events were fever (37.2%), respiratory tract infections (25%) and gastroenteritis (25%). Lower limb weakness was the most common initial symptom (51.5%) followed by tingling and numbness (27.3%). Upper limb onset of disease was found in 6.1% of cases. 30.3% of patients had sensory involvement. 39.4% of patients had cranial nerve involvement and 36.4% of patients had autonomic involvement at the time of peak disability. 18.2% of patients required mechanical ventilation and the average duration was 17.5 days. Average time taken to reach clinical nadir was 8.2 days. Mean CSF protein level was 86.7 mg% and albumino-cytological dissociation was found in 75.7% of cases. 57.6% cases were demyelinative, 3% axonal, 12.l% mixed, 15.2% normal and 6.1% consistent with Miller Fisher Syndrome (MFS) in electrodiagnostic studies. Decreased CMAP was found in 18.2% of cases. 72.7% of cases were treated with IVIG and average latency for starting treatment was 7.8 days. 3 patients (9.09%) died during the study and dysautonomia was the cause in two-third of patients. The factors affecting the outcome at discharge were

1. Requirement of mechanical ventilation

2. Features of axonopathy in electrodiagnostic studies

3. Decreased CMAP (<10% of lower limit of normal)

4. Presence of cranial nerve involvement

5. Presence of autonomic involvement.

DISCUSSION

GBS is the most common cause of acute or sub-acute generalized paralysis in practice. GBS occurs in all parts of the world and in all seasons, affecting children and adults of all ages and both sexes. A mild respiratory or gastrointestinal infection or immunization precedes the neuropathic symptoms by 1 to 3 weeks in approximately

60 percent of cases. Typical is a nondescript upper respiratory infection but almost every known febrile infection and immunization has at one time or another been reported to precede GBS.[3]

In our study the mean age group was 36.5years with maximum patients in the age group between 20 - 40 years of age. In a large scale prospective study by Italian Guillain Barre study groups of 297 patients, maximum percentage of patients were in the older age groups, more than 54 years (46.8%).[4] Various other studies had shown the bimodal distribution of age. The differences seen in this study group regarding age distribution may be due to the small sample size. Preceding events were there in 48.5% patients in our study. Major preceding events in our study were short febrile illness in 37.2% and 25% each for respiratory tract infections and gastroenteritis.

18.2% of cases in this study required mechanical ventilation. The average duration of ventilatory support was 17.5 days. In a Taiwan study by Rong Kyo Lyu et al.,[5] it was 20.9% and average duration was 10 day s. In a study conducted by J H Rees in South East England, 25% of patients required mechanical ventilation and the average duration was 42 days.[6]

30.3% cases had sensory involvement at clinical nadir and 39.4% had cranial nerve involvement and 36.4% had autonomic involvement in this study. All the cranial nerves except I, II and VIII were involved in different proportions in the study group. Among the cranial nerves facial nerve was most commonly involved (76.9%). There were multiple cranial nerve palsies in 46.2% cases and bulbar palsy in 7.7% cases. In the Spanish study by Sedano MJ et al.,[7] 66.7% cases had sensory involvement, 43.5% had cranial nerve involvement and 42.1% had autonomic involvement. Facial palsy was found in 86.6% cases in the Spanish study. In the Taiwan study by Rong Kuo Lyu et al., 60% of patients had sensory involvement, 60% had cranial nerve involvement and 38.3% had got autonomic involvement.

Electrodiagnostic studies were done in 31 cases. 57.6% cases were demyelinative in nature, 3% Axonal, 12.1% mixed and 6.1% consistent with MFS. 15.2% of cases had normal electrodiagnostic features. In the Taiwan study by Rong Kuo Lyu et al., 49% cases were demyelinative, 4% axonal, l9% MFS and 28% were unclassified.

Decreased CMAP was found to be relatively significant by statistical methods in this study (P value - 0.08). This observation is in concordance with Taiwan study by Rong Kuo Lyo et al., and the Spanish study by Sedano MJ et al.

Our study also had a high percentage of Miller Fisher variant of GBS (12.1%). Older age is not found to have adverse effect on outcome at discharge in this study. Axonal variant of GBS, requirement of mechanical ventilation, cranial nerve involvement, autonomic involvement were all showed to have adverse outcome at discharge in our study.

The limitations of the study are the small study population and absence of follow up study.

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