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Research Article

Clinical profile of adults with Guillain Barre Syndrome in North-West Rajasthan, India

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ABSTRACT

Background: Guillain Barre Syndrome is a heterogenous symptom complex and an important cause of acute flaccid paralysis in children as well as adults. This study was conducted to see the clinical profile of adults admitted with Guillain Barre Syndrome.
Methods: This prospective study was conducted in the department of medicine and neurology of S. P. Medical College and A.G. Hospitals, Bikaner, Rajasthan, India. Clinical diagnosis of Guillain Barre Syndrome was based on proposed criteria. Clinical data of 30 such patients were analysed.
Results: In this part of India, Guillain Barre Syndrome is common in early decades and second peak is seen in 4th decade. Male to female ratio was 3.28:1. 70% patients were from rural area. Maximum number of cases came in month of May followed by April, March, July, 23.33%, 16.66%, 13.33%, 13.33% respectively. No patient came in January and October. Preceeding illness was present in 73.3% of cases. Neurological examination showed that 63.33% cases presented with quadriparesis, 50% had cranial nerve involvement, 36.6% cases had paraparesis only, 36.6% had autonomic instability.
Conclusions: In this part of Rajasthan, Guillain Barre Syndrome has bimodal occurrence with male preponderance. Commoner in rural population. March to July found common months of occurrence of disease. Most patients have antecedent illness and quadriparesis is commonest presentation.

Keywords: Guillain Barre Syndrome, Clinical profile, North-west Rajasthan

INTRODUCTION

Guillain Barre Syndrome is an important cause of acute flaccid paralysis in children as well as adults. It is a well-defined clinical entity corresponding to primary inflammatory demyelinating lesions of peripheral nerves and spinal roots in the majority of cases seen in Western Europe and North America.[1] In these cases campylobacter enteritis, axonal damage and a positive response to anti-GMl antibodies were frequent finding.[2-5] The outcome of the disease is sometimes unfavourable and can be predicted by the presence of selected prognostic indicators.[6] Although Guillain Barre syndrome is consider to be related to antecedent infection, the detail mechanism is still unclear.[7] Winer et al, studied that over half of Guillain Barre syndrome patients experience symptoms of viral respiratory or gastrointestinal infections during the 1-3 weeks prior to the onset of neurological symptoms. Cytomegalo virus (in 13%) and *Campylobacter jejuni* (in approximately 30%) are the most common.

Disease is diagnosed by established clinical criteria which is further supported by cerebro spinal fluid (CSF) examination which shows albumin cytological dissociation in most patients and by electrophysiological

studies (nerve conduction studies). Treatment of Guillain Barre Syndrome consists of supportive measures and immunotherapies, especially high dose intravenous immunoglobulin and plasma exchange.

This study was conducted to see the profile of adults admitted with Guillain Barre Syndrome in this part of Rajasthan, India.

METHODS

This prospective observational study was conducted in the department of medicine and neurology in S.P.Medical College and A.G. Hospitals, Rajasthan, India over a period extending from July 2014 to June 2015.

Patients of the age 15 years and above with clinical features suggestive of Guillain Barre Syndrome were included in the study. Data of 30 patients were recorded on age, sex, preceeding event, seasonal of occurence neurological manifestations, results of CSF studies etc. The clinical diagnosis of Guillain Barre Syndrome was based on criteria proposed by the National Institute of Neurological and Communicative Disorders and Stroke (NINCDS).[9] All recruited patients meet the standard criteria for GBS, including the presence of progressive bilateral weakness with tendon are flexia, and others as defined by Cornblath and Asbury.[9]

RESULTS

On analyzing various details of thirty study subjects with Guillain Barre Syndrome following observations were made:

Of thirty patients 9 patients (30%) were in the age group of 31-40 years and 8 (26.66%) were from 15-20 years age group indicating that it is common in early decade and second peak is seen in 4th decade.

Of the thirty patients 23 patients were male and rest 7 were females with a male to female ratio being 3.28:1. As the hospital has also drainage from nearby villages belonging of patients from urban or rural area were also noted.

Twenty one (70%) of our patients were from rural area and rest nine (30%) were from urban area.

On analysis of seasonal variation of disease occurrence over the study period the maximum number of cases were seen in month of May (23.33%) with second maximum in April (16.66%). In March and July there were 13.33% of cases; August and September, 6.66% in each; February, November, December, 3.33% in each and no case in January and October. This distribution shows that the incidence of Guillain Barre Syndrome was high during months of March to July and low during October to February.

Proceeding illness in the form of respiratory or gastrointestinal illness or others were present in 73.3% of the patients. Respiratory illness as antecedent illness was present in 23.33% patients and 26.6% patients had gastrointestinal illness. No history of antecedent illness could be elicited in 26.6% cases.

Neurological examination of the study patients revealed that 63.33% patients presented with quadriparesis, 50% had cranial nerve involvement, 36.6% had paraparesis, 36.6% had autonomic instability, 16.66% had some sensory symptoms in the form of pain or numbness and 3.33% had loss of vibration and proprioception senses.

Table 1: Neurological manifestations of patients at the time of presentation.

Presenting neurological feature	No. of cases	%age
Quadriparesis	19	63.33
Paraparesis	11	36.66
Cranial nerve involvement	15	50
Sensory symptoms	5	16.66
Loss of vibration and pain sensation	1	3.33
Autonomic instability	11	36.66

DISCUSSION

Age and Sex distribution of the patients in our study showed that the disease can occur in any decade of life, with male predominant. In present study the age group of patients ranging between 15 years to 70 years with male to female ratio of 3.28:1. There were higher incidences of disease in early decades of life with second peak in 4th decade. The demographic profile is similar to study conducted by Ropper et al and Jiang et al in which they showed that the Guillain Barre syndrome may occur in any age, with bimodal distribution (occasionally including infancy) in either sex with male predominance.[10,11] McKhann also showed the higher incidence of GBS in young adult.[3] Rees et al also showed bimodal distribution of age, with peaks at 15-24 year and 65- 74 years.[12]

In present study the seasonal preponderance of disease incidence was seen in summer, and maximum number of cases came in March to July (76.66%).

Ho et al showed that demyelinating form affected all age group of the patients throughout the year with summer peak.[5] In Taiwan Lyu RK et al showed seasonal preponderance evident between March to May.[13] McKhann also found most cases of GBS occurring during the summer month and among children and young adult, most of which reside in rural area.[3]

In Europe and North America, Guillain Barre Syndrome is a non-epidemic and non-seasonal illness affecting all

age groups, mainly adults and rarely children Mc khann et al.[14]

So seasonal variation of disease in present study is similar to the China but differ from developed countries.[14] This may be because of occurrence of high incidence of respiratory, gastrointestinal and viral illness during these periods.

The regional distribution of disease showed the maximum cases of Guillain Barre Syndrome came from rural areas (70%). This observation is similar to study conducted by Ho et al and McKhann in China which also showed that more than half of the cases of Guillain Barre syndrome came from rural area.[5,14] The cause of its rural predominance is not known. It may be because of high incidence of respiratory, gastrointestinal illness, which goes untreated in rural area because of lack of awareness and unavailability of medical facility.

In present study, preceding illness before neurological symptoms affected 22 patients (73.33%), in the form of gastrointestinal infection, respiratory infection, fever due to unknown cause, or cirrhosis etc. only 8 patients (26.6%) developed flaccid paralysis without any identified preceding illness. The present study showing the most common preceding illness was gastroenteritis in 8 (26.6%) patients followed by respiratory tract infection in 7 patients (23.33%), one patient (3.33%) had cirrhosis, and remaining 6 (20%) patients had fever without any detectable cause before the onset of neurological illness.

In Italian Guillain Barre study group an antecedent events was reported in 60.9% patients.[7] Lyu et al and Sedano et al also reported preceding illness in 67% and 57% of GBS patients respectively.[13,15] Visser et al found that a preceding gastrointestinal tract infection occurred in 13% of 120 cases.[16] Emilia Romagna study group showed that gastrointestinal (18.2%) illness was most common preceding illness followed by respiratory illness (9.1%).[17] So the observation of preceding illness before neurological symptoms in present study are similar to study of Lyu et al, Sedano et al and Emilia study group Italy.[13,15,17]

As previously reported the occurrence of infective antecedents during the month preceding the onset of Guillain Barre Syndrome was investigated by means of a self-administered questionnaire and the results were not modified by laboratory investigations. As stool culture may be negative by the time of symptoms appears, usually one to three weeks after the diarrhoel illness hence serological testing for elevated levels of serum IgA, IgM and IgG, specific to campylobacter jejuni should be performed, in addition to stool culture, causes of preceding illness could not be identified, as these test are not available in the college.

In present study the neurological presentation of the patients showed that maximum number of cases presented with quadri paresis 19 patients (63.33%) at the time of admission. Eleven (36.66%) patients out of total admitted with paraparesis (35.71%) only. The sensory symptoms were present in 5 patients (16.66%) either in the form of paraesthesia or myalgia.

The cranial nerves were involved in total 15 cases (50%), in which the facial nerve was the most commonly involved. Similar findings were also noted by Emilia study group, Italy and they showed cranial nerve involvement in 55% of GBS patients.[17] Every patient presented with sudden onset of weakness either in both lower limbs or in all four limbs, with symmetrical involvement and upward progression of the disease. The hypotonia and areflexia of the limbs were present in most of the patients. In our study both the proximal and distal group of muscles in each limb were equally affected.

Hung et al concluded that muscle weakness usually starts in the leg and ascends to the arm.[18] Proximal muscle weakness was more prominent than distal. At the height of the disease the majority of the patient were bed ridden and many of them had quadriparesis. Loffel et al and Winer et al showed that cranial nerves were involved in more than 50% of the cases, facial nerve was the commonest, followed by 9,10,11 and lastly 3,4,6 cranial nerve.[19,21] Kaur et al reported cranial nerve involvement in 41% cases.[21] Thus present study is similar to Loffel et al and Kaur et al.[19,21]

CONCLUSIONS

In this part of Rajasthan, India, GBS has bimodal distribution of cases. Males were more involved than females. Disease is common in rural population. Cases occur more commonly in the months from March to July. Most of the patients have respiratory and gastrointestinal illness antecedent to onset of neurological features of GBS. Quadriparesis is most common presentation.

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