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Clinical Profile of Guillain Barre Syndrome From A Tertiary Care Centre

KEYWORDS: Guillain-Barre syndrome; Nerve Conduction Study; IVIG, Plasmapheresis; Methyl prednisolone.

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ABSTRACT

OBJECTIVES: *To study clinical presentation, pattern of nerve conduction studies(NCS), treatment modalities and outcome of patients with Guillain Barre Syndrome (GBS) from a tertiary care centre at Hyderabad.*

MATERIAL AND METHODS: *70 patients of GBS studied in detail including history, clinical examination and investigations. All patients were watched for respiratory insufficiency and those who developed respiratory paralysis were given assisted mechanical ventilation. Patients were treated with IV Methyl prednisolone, IV Ig and plasmapharesis depending on patient condition and outcome was observed. Pattern of NCS in all patients at admission and outcome was studied.*

RESULTS: *Patients age group affected was 16-70 yrs. The male: female ratio was 1.9: 1. Antecedent infection in the form of fever(24patients), loose motions(8 patients) were present in 32(45%) out of 70 patients. Quadriparesis was present in 52(74%) patients and paraparesis in 18(25%) patients. Areflexia was found in 69(98.5%) patients. NCS showed acute motor and sensory axonal neuropathy (AMSAN) in 52(74%) patients, acute motor axonal neuropathy(AMAN) in 6(8.5%) patients, acute inflammatory demyelinating polyradiculoneuropathy (AIDP) in 8(11.4%) and secondary axonal in 4(5.7%) patients. Out of 70 patients 3 (4.2%) patients were treated with IV Ig, 5(7.1%) patients with plasmapheresis. IV steroids and supportive treatment given in 62(88.5%) patients. 3(4.2%) patients required mechanical ventilation, one patient died and 68(97%) were recovered, one patient with respiratory failure discharged against medical advice.*

CONCLUSION: *GBS is more common in 21-40 yrs age group, with male: female ratio of 2.1:1. Antecedent infection is seen in 45% patients. Commonest presentation was quadriparesis (74%). Only 3 patients developed respiratory paralysis and needed ventilatory support and 1 patient expired and 68 patients recovered.*

Introduction:

Guillain-Barre Syndrome is a prototype of acute onset polyneuropathy. It is usually a monophasic immune-mediated disorder. The term GBS is often considered to be synonymous of AIDP, but with the increasing recognition over the past few decades of variants, the number of diseases that fall under the rubric GBS has grown to include axonal variants and more restricted variants, such as Miller-Fisher syndrome(MFS). The reported incidence rates for GBS are 1 to 2 per 100,000population. The subtypes of GBS have different incidence rates in different parts of the world. In Europe and North America AIDP is dominant contributing to 90% of the cases. In contrast in China and Japan AIDP forms less than 40%, with acute motor axonal neuropathy (AMAN) being the commonest subtype. The picture is intermediate when we look at other population. In Indian series the incidence of AIDP and AMAN are virtually equal, although AMAN is commoner in younger patients. In the western countries GBS is common in the 5th decade, but in India it occurs more commonly in younger age. GBS is common in both men and women and can occur at any age. There is a male preponderance among the hospitalised population[1].

Aims AND OBJECTIVES:

To study the clinical presentation, treatment modalities and outcome and the pattern of nerve conduction studies in patients with Guillain Barre Syndrome from a tertiary care centre at Hyderabad.

Materials and METHODS:

The present study included 70 cases of GBS during the period of Jan-2012 to Aug -2014. Patients were examined clinically and investigations in the form of complete blood picture, Renal Function Test including Serum electrolytes were done in all patients. NCS were done in all patients. All the patients were monitored for respiratory insufficiency and those who developed respiratory paralysis were treated with mechanical ventilation. Few patients were treated with IV Ig, and Plasmapheresis.

Inclusion Criteria :

1. Sudden onset paraparesis and quadriparesis.
2. Disease course less than 4 weeks.
3. Areflexia.
4. age more than 14 years.

EXCLUSION CRITERIA:

1. Gradual onset weakness.
2. History of exposure to toxins like organophosphates, lead.etc
3. Botulism, Diphtheria, porphyria.

RESULTS:

Table 1: Age and sex distribution

Age	Male	Female	Total
15-20	8	3	11

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21-30	13	8	21
31-40	15	5	20
41-50	8	5	13
51-60	1	1	2
More than 60	1	2	3
Total	46	24	70

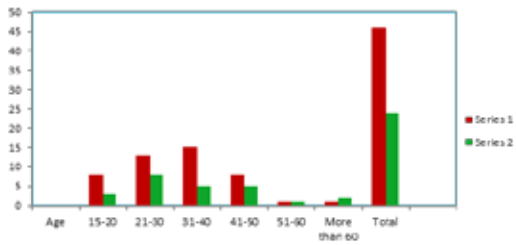

Table 2: Antecedent events

Illness	Male	Female	Total
Fever, Cough	20	4	24
Loose motions, Vomiting	6	2	8
Vaccinations	0	0	0
Total	26	6	32

Table3: Clinical Features

Clinical Features	Male	Female	Total(%)
Quadriparesis	35	17	52
Paraparesis	11	7	18
Bladder Involvement	4	1	5
Sensory signs &Symptom	19	9	28
Atypical presentation (Descending Paralysis)	0	0	0
Respiratory Paralysis	3	1	4

Table 4: Various signs encountered in the patients

Signs	Male	Female	Total
Areflexia	48	21	69
Sensory abnormalities	19	9	28
Sphincter disturbances	4	1	5

Table 5: Electrophysiological abnormalities (NCV studies)

NCV	Male	Female	Total
AIDP	6	2	8
AMAN	4	2	6
AMSAN	33	19	52
MILLER FISHER	0	0	0
OTHERS	3	1	4

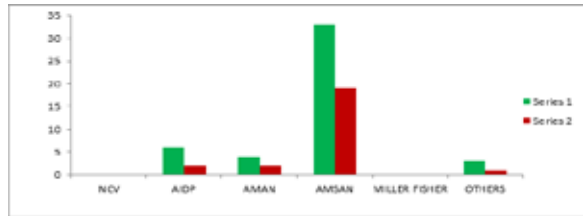

Table 6: Modalities of treatment and outcome

Treatment:	Male	Female	Total
IVIG	3	0	3
Plasmapheresis	2	3	5
Steroids and supportive	42	20	62

OUTCOME	Male	Female	Total
Improved	44	24	68
Death	1	0	1
Lama	1	0	1

Discussion:

The average incidence of guillian barre syndrome was between 1.1/100,000/year and 1.8/100,000/year[2]. The incidence of GBS increased with age after 50 years .

Age Prevalence

In the majority of studies that included incidence rates broken down by age, increases in rates were observed in most studies of people aged 50 years or more GBS is prevalent among the all age groups[2]. According to Adams, Victor and Ropper age ranged from as small as 8 months to as old as 80 years for GBS[3] .In our study maximum patients were in the age group of 21 to 40 years of age. The youngest patient in our study was 16 yrs and the oldest was 70 years.

Sex Prevalence

Roberto D'Alessandro did a study in Emilia-Romagna Italy[4] and found a significant male preponderance in GBS with male :female ratio of 1.88. According to Nobuhiro-Yuki study[5],male to female ratio was 1.78. In Rao suhail y. Khan ,sabir ali study[6] male to female ratio was 2.41. the present study also showed similar male preponderance (M:F ratio was 1.9:1).

History of antecedent events

History of antecedent illness is indeed significant in many cases of GBS. According to study done by Anita McGrogan a Gemma[7] in approximately 70% of cases there was a significant history of preceding illness. In our study out of 70 patients 32 patients (22%) had history of preceding illness.

Clinical Features in the GBS

GBS usually begins abruptly with distal[1], relatively symmetrical onset of paraesthesias and quickly followed by progressive limb weakness. Progression is rapid, with 50% of patients reaching clinical nadir by 2 weeks and more than 90% by 4 weeks. Current diagnostic criteria include <4 weeks of progression to clinical nadir. Approximately 80% to 90% of patients with GBS become non-ambulatory during the illness. Pain is prominent in 50% of patients.

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Neurological examination is characterised by distal and often proximal, relatively symmetrical, weakness. Though GBS is essentially a motor neuropathy, sensory dysfunction is seen in few patients. It is seen more in demyelinating form of GBS. Sensory examination is often normal in the early phase of the disease.GBS patients often develop cranial nerve weakness, usually in the form of facial or pharyngeal weakness. Diaphragmatic weakness due to phrenic nerve involvement is also common

Motor symptoms:
The legs are usually more affected than the arms[8], In a study by Shubhangi Vithal Dhadke1et al[9], 39(97.5 %) patients had the most common mode of presentation is ascending paralysis leading to quadriparesis with absent Deep tendon Reflexes. In a study by Christiaan Fokke, Bianca van den Berg,et al[10] reflexes and strength were described in detail in 395 (80%) patients for the arms and in 410 (83%) patients for the legs. At study entry, normal reflexes in paretic limbs were observed in 36 (9%) patients. The present study had 52 patients with quadriparesis , 28 patients with paraparesis , and all pts showed areflexia

Sensory symptoms
According to Dana L. Newswanger, Charles R. Warren ,et al[11] patients with GBS initially presented with tingling dysesthesias in the extremities. Paresthesias occur, spreading proximally but seldom extending past the wrists and ankles. ,In a study by Shubhangi Vithal Dhadke et al [9], sensory symptoms were observed in 13 (32.5%) patients in the form of tingling numbness, paraesthesia or pain. Whereas our study had a slightly higher incidence of sensory symptoms(40%) .

NCS :
GBS can be divided into at least 4 main subtypes of patterns[2]: acute inflammatory demyelinating polyradiculoneuropathy (AIDP), the axonal subtypes, i.e. AMAN and AMSAN, and Miller Fisher syndrome, the main symptoms of which are oculomotor dysfunction, ataxia and areflexia. The earliest findings in AIDP are prolonged F-wave latencies or poor F-wave repeatability due to demyelination of the nerve roots [12]. This is followed by prolonged distal latencies (due to distal demyelination) and temporal dispersion or conduction block. In AMAN, CMAP(compound motor action potential) amplitudes are significantly reduced in the first few days and then in severe cases become absent. In AMSAN the sensory potentials are reduced in amplitude and often absent, absence of H-reflexes may be the only abnormality in 75% of MFS.

In North America and Europe, around 5% of patients with GBS have the axonal subtypes, whereas in Central and South America, Japan and China axonal subtypes account for 30–47% of cases[1] . Miller-Fisher syndrome has been found to account for around 5% of cases of GBS. In our study out of 70 patients, 52(74%) patients had AMSAN subtype , while 8 (11.4%)patients had AIDP 6(8.5%) had AMAN others 4(5.7%) . Miller fisher variant not observed.

Treatment
In the acute phase in bed-bound adult patients require supportive therapy, immunotherapy can be used taking into consideration the cost factors and the clinical status (staging, complications and other co-morbid conditions) of individual patients[1]. In the vast majority of patients with GBS, treatment should be initiated as soon after diagnosis as possible. If the patient has already reached the plateau stage, then treatment probably is no longer indicated, unless the patient has severe motor weakness and one cannot exclude the possibility that an immunologic attack is still ongoing[8]. In our study 3 patients were treated with IV Ig, 5 with plasmapharesis, remaining pts given Methyl prednisolone and supportive care.

Outcome
Approximately 85% of patients with GBS achieve a full functional recovery within several months to a year[8]. The mortality rate is <5% in optimal settings. In a study by GDP Smith et al mortality of 4% observed.[13] In our study out of 70 patients, 3 patients had respiratory failure ,1 patient recovered, 1 expired , 1 patient discharged against medical advice (mortality of 0.7 %) .

CONCLUSIONS

1. Guillain Barre Syndrome is more common in males than in females.
2. Commonest age group was 21 to 40 years of age.
3. About 45% of patients had history of antecedent infection.
4. Commonest clinical presentation was quadriparesis.
6. AMSAN is the most common (74%) subtype in our study.
7. Three patients went into respiratory failure and needed ventilatory support and 1 patient expired.

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