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Original Research Paper

A study on clinical profile of Landry Guillain Barre syndrome

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Abstract

The major clinical manifestation is weakness which evolves more or less symmetrically over a period of several days to four weeks. Proximal as well as distal muscles are involved with lower extremities being involved earlier than the upper. Trunk, intercostal, neck muscles and cranial nerves are affected later. All adult patients, diagnosed as Guillain-Barre Syndrome, who strictly complied with the NINCDS criteria, admitted to medical college hospital were included in this study. This includes a retrospective study of four years and prospective study of one year. Ninety seven patients entered the study. In our study, 52 (53.6%) patients had cranial nerve involvement. 7th, 9th and 10th Cranial nerves and the nerves supplying ocular muscles, were commonly affected in the descending order given. Seventh nerve was involved in 32 (33%) patients and out of this 7 patients had unilateral involvement.

Keywords: Landry Guillain Barre Syndrome, Cranial Nerve involvement, GBS

Introduction

Acute inflammatory polyradiculoneuritis, the Guillain-Barre' Syndrome (GBS) has come to be accepted as a clinical entity, although the boundary between it and chronic inflammatory demyelina1ng polyneuropathy has given rise to discussion. Recent observations have suggested that the GBS may represent the consequence of more than one pathological mechanism. In most cases the salient pathological change is demyelination [1].

The disease is typically a monophasic illness with progressive weakness over 1-3 weeks followed by recovery. A mild respiratory or gastrointestinal infection precedes the neuritic symptoms in 70% of cases. In others, there may be a preceding history of surgical procedures, other viral illnesses, mycoplasma infection and Lyme's disease. Administration of antirabies vaccine and influenza given in 1976 in the USA were associated with a several-fold increase in the incidence of GBS. The me an annual incidence rate is 1.7 per 100000 population [2].

The course of the disease can be divided into three parts: The progressive phase, the plateau phase and the recovery phase.

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Weakness usually progresses to total motor paralysis and death may occur from respiratory failure in a few days. Most of the patients have pain resembling muscular discomfort following exercise early on in the illness. Paresthesia are common. Weakness develops rapidly but muscle atrophy does not occur. Facial diplegia occurs in half of the cases [3].
Involvement of the autonomic nervous system has been commonly observed by various workers and contribute significantly to the mortality in this condition. Bansal *et al*. reviewed the autonomic disturbances in patients with GBS. The various autonomic disturbances observed were hypertension, sinus tachycardia, postural tachycardia, abnormal blood pressure responses to hand immersion test and abnormal heart rate response to atropine. The severity of autonomic dysfunction was not related to the severity of the paralysis and motor nerve conduction velocity [4].

Methodology

All adult patients, diagnosed as Guillain-Barre Syndrome, who strictly complied with the NINCDS criteria, admitted to medical college hospital were included in this study. This includes a retrospective study of four years and prospective study of one year. Ninety seven patients entered the study.
Data collection was done according to the proforma attached. In retrospective cases, the information was collected from the patient's records. In the prospective group, a detailed history was taken, all patients were examined and then the data collected.
All the Patients underwent lumbar puncture on the day of admission and the cerebrospinal fluid was sent for the cell count, culture, protein content and sugar analysis. Each one of them had a complete haemogram and a urine examination.
Urine was also examined for porphobilinogen. Serum electrolytes and serum calcium levels were estimated on admission to rule out hypokalemic paralysis and hypocalcemic states. Liver function tests and HBsAg and HIV tests were done on all the patients. A throat swab was taken in patients with sore throat to rule out diphtheria.

Results

Table 1: Age Sex Distribution

Age group (years)	No. of patients	Percentage	Male	Female
Less than 20	25	25.8%	21	04
21-30	23	23.7%	19	4
31-40	21	21.6%	L8	3
41-50	17	17.5%	12	5
51-60	06	6.2%	5	1
More than 60	05	5.2%	3	2
Total	97	100%	78	19

The incidence of GBS was more in the younger group. '70% of our cases were below 40 years of age. 80.34% were ma les and 19.65% were females.
The incidence of GBS in each month of the year was studied. The maximum number of cases were found in June to October months (55%).
Various occupations of the patients who entered the study were noted. The agriculturists formed the maximum number of patients (32%) under study followed by students (2%) and house wives (16%). The incidence of GBS among agriculturists was significantly higher than the other groups except for students. 60% of the patients were from the rural areas and 40% from the urban areas.

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Table 2: Predisposing factors

Predisposing Actors or preceding illness	Number of patients	Percentage
Upper Respiratory Infection	56	72.8%
Diarrhoeal Diseases	8	10.4%
Surgery	2	2.6%
Vaccination	1	1.3%
Enteric fever	2	2.6%
Tuberculosis	2	2.6%
Hepatitis-B	2	2.6%
Herpes zoster	2	2.6%
Hodgkins lymphoma	1	1.3%
Myocardial infarction	1	1.3%

Upper respiratory tract infection was present in the maximum number of patients. 20.6% of patients did not give history of any predisposing illness. It is interesting to note that there was one patient who developed GBS after myocardia infarction.

Pain was present early in the ill ness in 60(61.8%) patients. Pain was in the form of severe muscular pain in lower limbs, girdle pain, pain in interscapular and nuchal region.

Motor Weakness was found that 88 patients (90.4%) had lower limb weakness first. Upper limb weakness was first noted in 8 patients (8.4%). One patient presented with cranial nerve palsy.

Muscle power in the upper and lower limbs were noted at the time of admission.

Table 3: Table showing the muscle power in upper and lower limbs on admission

Average muscle power grade	Upper limb		Lower limb	
	N	%	N	%
Zero	12	12.5	15	15.6
1	5	5.4	10	10.49
2	12	12.5	19	19.8
3	40	41.7	42	43.8
4	28	29.2	9	9.4%
5	0	0	1	1

The weakness in the upper and lower limbs were analyzed. In the upper limbs proximal muscle weakness was seen in 72 (74.25%) and distal muscles in 55 (56.65%) patients. The proximal and distal weakness was higher in the lower limbs.

Table 4: Cranial Nerve involvement

Cranial nerve	Unilateral involvement	Bilateral involvement
3^{rd} and 4th	--	1
6th	--	1
3^{rd}, 4^{th} and 6th	--	1
5th	--	1
7th	7	25
9^{th}, 10^{th}	--	13
9^{th}, 10^{th}, 11^{th},12th	--	3

Fifty two (53.6%) patients had one or more cranial nerve involvement. The seventh nerve was involved more other nerves (33%) than followed by 9th and 10th nerves.

The sensory modalities were checked in all our patients. 46 (47.4%) patients had hyperalgesia and hyperesthesia. Hyperesthesia alone was seen in 9 (9.3%) patients and hyperalgesia in one

(1%) patient.
Abnormality of one or more sensory modalities was detected in 61 (62.8%) patients. 47.4% of patients had subjective sensory symptoms and 62.8% of patients had objective sensory signs. Incidence of sensory impairment was more in the lower limbs. Touch, temperature and/or position and vibration were the modalities that were impaired.
Forty three (44.3%) patients had breathing difficulty. All of them needed ventilator support. 54 (55.7%) patients did not have breathing difficulty and never needed ventilatory assistance.

Table 5: Showing the hyperesthesia in patients with GBS and their sex distribution

		Outcome		Sex	
Autonomic dysfunction	**No. of patients (percentage)**	**Survived**	**Expired**	**Male**	**Female**
Bradycardia	13 (13.8%)	1 (7.6%)	12 (92.4%)	11	2
Tachycardia	7 (7.2%)	7 (100%)	Nil	6	1
Hypertension Tachycardia	17 (18%)	14 (82.6%)	3 (19.4%)	15	2
Hypertension	10 (10.3%)	9 (90%)	1 (10%)	6	4
Ventricular Tachycardia	4 (4.1%)	0	4 (l00%)	3	1
Ventricular ectopic beats (> 6/mt)	2 (2%)	1 (50%)	1 (50%)	2	0
Multifocal No	44 (45.3%)	40 (91%)	4 (9%)	35	9

Discussion

Pain was present early in the ill ness in 60 (61.8%) patients in this study. This can be compared to, 56% in the Haymaker and Kernoham's series, 55% in Ropper's study, 55% in the Marshall's series and 96% in the De Jager and Sluiter study. The pain in our patients was in the form of severe muscular pain in lower limbs, girdle pain, pain in inter-scapular and nuchal region.
In the present study, 88 (90.4%) patients had lower limb weakness first. Upper limb weakness was evident first in 8 (8.4%) patients. One patient presented with cranial nerve palsy.
In the study by Kennedy, 67% of patients had weakness first in the lower limb, 26 had weakness first in the upper limb and 7% had first cranial nerve involvement. Kaur *et al*. noted lower limb weakness first in 58% of patients and 29% had weakness first either in upper limb or had cranial nerve palsy [5].
In the upper limb, proximal muscle weakness was seen in 72 (75%) patients, and the rest had a combination of proximal and distal muscle weakness. In the lower limb, proximal muscle weakness was seen in 76 patients and the rest had a combination of proximal and distal weakness. Kaur *et al*. noticed proximal muscle weakness in 44% of patients and combination of proximal and distal muscle weakness in the rest of the patients [6].
In the present study al l the patients (97) 100% had absent deep tendon reflexes in the upper and lower limbs on admission. On admission Kaur *et al*. noticed absent deep tendon ref lexes in 99%, DeJager and Sliter in 84% and nails *et al*. in 82% of patients.
In our study, 52 (53.6%) patients had crania l involvement. 7th, 9th and 10th cranial nerves and the nerves supplying ocular muscles, were commonly affected in the descending order given. Seventh nerve was involved in 32 (33%) patients and out of this 7 patients had unilateral involvement; Kaur *et al*. noticed cranial nerve involvement in 47% of patients, out of which facial weakness was found in 28%. DeJager and Sluiter (1991) found facial palsy in 59% of patients and out of this, 5 patients had unilateral weakness. 27% of patients were found to have facial weakness in the study by Kennedy *et al*. [7, 8].
Forty six patients (47.4%) had hyperalgesia and hyper asthesia. Hyperesthesia alone was seen in 9 patients (9.3%) and hyperalgesia in one (1%) patient. 62.8% of patients had abnormality of one or more sensory modality.

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Conclusion

- Weakness was first noted in the lower limbs in 88 (90.4%) patients, in upper limb in 8 (8.4%) patients and one (1%) patient presented as Miller Fisher variant.
- Cranial nerve involvement was seen in 53.6% of patients and the most frequently involved nerve was found to be seventh cranial nerve (33%).

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