IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 22, Issue 6 Ser.3 (June. 2023), PP 26-29
www.iosrjournals.org

Csf And Electrophysiological Profile Of Guillain Barre Syndrome And It's Relation With 30 Day Morbidity And Mortality

Dr. Rahul Peter [1], Dr. Prasanthakumar T[2], Dr. Satish Kumar [3]
[1]*Junior Resident, Department of General Medicine, Govt. Medical College Kottayam, Kerala, India*
[2] *Professor, Department of General Medicine, Govt. Medical College Kottayam, Kerala, India*
[3]*Professor, Department of General Medicine, Govt. Medical College Kottayam, Kerala, India*

ABSTRACT:
Background:
GBS is a self-limiting monophasic disorder and good recovery usually occurs in 70-80% cases.It is characterized by an acute onset of relatively symmetric, predominantly motor, flaccid and areflexic paralysis which evolves over a period of up to 4 weeks. Current research aimed to study CSF and electrophysiological profile and outcome in patients of Guillain-Barre syndrome admitted in a tertiary care institute and thereby to identify poor outcome patients at initial stages itself.
Objectives:*To describe the CSF and Electrophysiological profile of patients admitted with Guillain-Barre syndrome and to correlate with the outcome of patients*
Methodology:
The study was an observational study done in 50 patients who were admitted with clinically probable Guillain-Barre syndrome, in Medical wards of Department of General medicine, Government Medical college, Kottayam. The study was carried for a period of 1 year. Information was collected through a proforma with Nerve conduction studies and CSF study were done and the data collected was analysed using SPSS version 24.
Results:
Significant association was found in unfavorable outcome with axonopathy in NCS There was no statistically significant association in outcome with CSF findings..
Conclusion: *There was statistically significant association between unfavorable outcome and axonopathy in NCS .*

Keywords: *Guillain Barre Syndrome ,Nerve conduction studies,CSF study*

Date of Submission: 25-05-2023 Date of Acceptance: 05-06-2023

I. Introduction

The peripheral nerve system disorder known as Guillain Barre Syndrome (GBS) is an acute, self-limited, inflammatory, and autoimmune condition that is typically brought on by a bacterial or viral infection or other antecedent events. It affects between 0.9 and 2/100,000 people annually, with a slight male preponderance and a global spread. 15% of patients might not be able to walk by the end of a year of disease, and 5% of patients typically expires . Because of its protracted morbidity, it significantly reduces productivity and places a burden on the health care system. In terms of kind, severity, causation, and prognosis, it is a heterogeneous condition. A rapid progressive weakness of all four limbs, with or without sensory loss, that manifests within four weeks is a hallmark of GBS. This is then followed by a gradual clinical and electrophysiological recovery. So,early identication of factors associated with poor outcome can greatly improve the care and final outcome of GBS patients.

II. Materials and Methods

Type of study: This is a Prospective observational study which was approved by the institutional review board and received the ethics committee approval from the institutional ethics committee.
Study population: All patients who were diagnosed as GBS fulfilling the Asbury criteria[2,3,5] admitted in Medicine wards of GMC Kottayam
Inclusion criteria: Patients above 13 years with acute areflexic flaccid motor paralysis satisfying Asbury criteria
Exclusion criteria: Patients treated with IvIg or plasmapheresis at an earlier hospital and then referred for further management.

Methodology: Written consent and detailed history taken from the patient or reliable bystander for the assessment of disease status. Following this a detailed clinical examination was done. The proforma was filled and all values collected and entered systematically. A detailed history includes date of onset of symptoms and time taken to reach clinical nadir was elicited. . A detailed clinical examination was done at the time of admission, at the time of clinical nadir and scored using Modified Disability Scale for GBS by Hughes[1]. Disability on admission and at nadir were assessed with Modified Disability Grading Scale for GBS by Hughes and disability at discharge and on 30th day from 31admission were assessed by FIM score. Nerve conduction tests were performed in all patients on next day of admission and features noted. The patients were subjected to CSF study after 1 week of onset of symptoms. Patient were followed up for the outcome till death (if before 30th day of admission) or on 30th day of admission. Outcome is divided a favourable and unfavourable outcome. Favourable outcome defined as improvement in FIM score on review, compared with discharge. Unfavourable outcome is defined as mortality during or after discharge or persistence or worsening of poor scores in FIM.

Sample size:
Based on study by Chirag J Patel[6], prevalence of sensory involvement was 23 % (lowest percentage among prevalence of variables considered) Sample size = $4pq/d2$ $4\times23\times77/4.6\times4.6$
= 334. Since it is a rare case, 50 consecutive cases fulfilling the Asbury criteria
admitted in Medicine wards of GMC Kottayam were taken after Institutional Review Board approval.

Data analysis procedure:
Quantitative Variables were expressed as mean, standard deviation. Qualitative variable were expressed as frequency and percentage. Association between categorical variables was analysed by chi-square test. A p-values <0.05 was considered statistically significant. Data was entered in Microsoft Excel and Data analysis was performed using SPSS version 24

III. Confidentiality:

Strict confidentiality was ensured by keeping the patients anonymous with study numbers and the information gathered will only be used for scientific publication.

IV. Ethical Issues:

The proposal of the study was presented in front of the Institutional Review Board and the approval for the study was obtained from the Institutional Ethics Committee and informed consent was taken from all patients enrolled in the study.

V. Analysis of Data

Quantitative Variables were expressed as mean, standard deviation. Qualitative variable were expressed as frequency and percentage. Association between categorical variables was analysed by chi-square test. A p- values <0.05 was considered statistically significant. Data was entered in Microsoft Excel and Data analysis was performed using SPSS version 24

VI. Results

Table 6.1 Distribution Based on Population Characteristics : AGE DISTRIBUTION OF SAMPLE

Age in years	Frequency	Percent
≤40	25	50
41-60	21	42
>60	4	8
Total	50	100

TABLE 6.2 SEX DISTRIBUTION

SEX	Frequency	Percent
Male	30	60
Female	20	40
Total	50	100

TABLE 6.3: CSF STUDY AND OUTCOME

CSF STUDY	Outcome				Total		χ^2	df	p
	FAVORABLE		UNFAVOURABLE						
	N	%	N	%	N	%			
A:C dissociation Absent	2	100	0	0	2	100	0.40	1	0.529
A:C dissociation Present	40	83.3	8	16.7	48	100			
Total	42	84	8	16	50	100			

TABLE 6.4: NCS STUDY AND OUTCOME

NCS STUDY	Outcome				Total		χ^2	df	p
	FAVOURABLE		UNFAVOURABLE						
	N	%	N	%	N	%			
Axonopathy	6	50	6	50	12	100	13.62	2	0.001
Demyelination	34	94.4	2	5.6	36	100			
None	2	100	0	0	2	100			
Total	42	84	8	16	50	100			

Inference

- Axonopathyin NCS can predict poor outcome in GBS,while CSF study findings have no significant association with outcome in GBS

VII. Discussion:

In our study,50 patientts satisfying Asbury criteria[2,3,5] for GBS,from medical wards of Governmnet Medical Cllege Kottayam were studied. 25 patients were less than 40 years old, 21 were between 41-60 years and 4 were above 60 years of age. 30 were males and 20 were females. Based on CSF findings, 48 patients were having albuminocytological dissociation and 2 were not having albuminocytological dissociation. 83.3% of those having albuminocytological dissociation were having good outcome, while 16.7% of those having albuminocytological dissociation were having bad outcome. 100% of those without albuminocytological dissociation were having good outcome.The p value for this relation ws 0.529, and was statistically not significant. Regarding NCS study, 94.4% of those with demyelination were having good outcome,while 50% of those with axonopathy were having bad outcome.The p value for this relation was 0.001, making it very statistically significant. NCS study showed demyelination in 72% in present study,45% in Chirag J Patel et al,60.6% in Amitav Bhargav et al[8] and 57.6% in Kannan et al[4] .Albuminocytological dissociation was present in 96% of present population,56.41% in Chirag J Patel,80% in Amitav Bhargav et al and 65.3% in Dhadke et al[7]. So it is almost a consistent finding as per present study.As per Kannan et al[4], features of axonopathy in electro diagnostic studies is associated with poor outcome in GBS.

VIII. Conclusion:

There was statistically significant association between axonopathy in NCS and poor outcome in GBS.

.

References:

[1]. Hughes RA, Cornblath DR. Guillain-Barre syndrome. Lancet 2005;366: 1653- 1666

[2]. Asbury AK, Amason BGW, Karp HR, McFarlin DF. Criteria for diagnosis of Guillain-Barre syndrome. Ann Neuro11998; 3: 565-66.

[3]. Asbury AK, Comblath DR. Assessment of current diagnostic criteria for GuillainBarre syndrome. Ann Neuro11990; 27 (suppl): S21-24

[4]. J, Kannan A. Clinical, Electrophysiologicaland Electrolye profile of Guillain Barre syndrome in a tertiary care centre. Int J Res Med Sci 2014;2:445-7.

[5]. Asbury AK, John Comblath DR. Assessment of current diagnostic criteria for GBS. Ann Neurol.1990;27:s2l-4.

[6]. Chirag J Patel, Jigarkumar B Gosai, Divyesh B Kalariya, Manoj Rathod, Surendhar S. Clinical profile ,electrodiagnostic variations, treatment and outcome in Guillain-Barré Syndrome: prospective study of 78 patients. International Journal of Contemporary Medical Research 2019;6(8):H1-H6.

[7]. Dhadke SV, Dhadke VN, Bangar SS, Korade MB.Clinical Profile of Guillain Barre Syndrome. J Asso Physicians India 2013;61: 168-72.

[8]. Bhargava A, Banakar BF, Pujar GS, Khichar S.A studyof Guillain-Barré syndrome with reference to cranial neuropathy and its prognostic implication. J Rural Pract. 2014;5:S43-7.