Original Research Article

A study of the factors associated with outcome in the patients of Guillain barre syndrome

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Abstract

Background: GBS is an acute monophasic immune-mediated polyradiculoneuropathy with a mean age of onset of 40 years that affects slightly more males than females of all ages, races and nationalities. The worldwide incidence of GBS ranges from 0.6 to 4.0/100,000 people **Aims and Objectives:** To study the factors associated with Outcome in the patients of Guillain Barre syndrome. **Methodology:** This was a cross-sectional study carried out carried out in the patients suspected of Guillain Barre syndrome (GBS) were screened by Nerve conduction test (NCT) and those who are shown the features suggestive of GBS were included into the study. The details of the patients like age sex, clinical features, Outcome and associated factors with the poor outcome were noted. The data was entered to excel sheet and analyzed by excel software for windows 10. **Result:** The majority of the patients were having age of 20-30 were 28.95%, followed by 30-40 were 23.68%, 10-20 were 13.16%, 40-50 were 10.53%, <10, 50-60, >60 were 7.89%. The majority of the patients were Male i.e. 65.79 % and Female were 34.21%. The most common clinical features were Tingling and pain in the soles and palms found in 92.11% of the patients followed by Weakness of limbs in 89.47%, Ptosis/ophthalmoplegia in 65.79%, Facial nerve involvement in 55.26%, Sensory symptoms found in 50.00%, Respiratory difficulty found in 28.95%, Bulbar symptoms in 18.42%. The majority of the patients recovered i.e. 42.11%, followed by Recovered with residual weakness in 31.58%, On Ventilator in 15.79%, Death in 10.53%. The factors associated with the poor outcome were like Age more than 40 were 60.00%, followed by Pneumonia in 50.00%, Pneumothorax in 40.00%, Presence of Autonomic dysfunction in 30.00%, Hypokalemia in 20.00%, Presence of Bleeding in 10.00%. **Conclusion:** It can be concluded from our study that the majority of factors associated with poor outcome were Age more than 40 Yrs., Pneumonia, Pneumothorax, Presence of Autonomic dysfunction, Hypokalemia Presence of Bleeding etc

Key Word: Guillain Barre syndrome(GBS), Outcome of GBS , Nerve conduction studies

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Received Date: 29/01/2019 Revised Date: 19/03/2019 Accepted Date: 12/05/2019
DOI: https://doi.org/10.26611/102110226

Access this article online	
Quick Response Code:	Website: www.medpulse.in
	Accessed Date: 24 May 2019

INTRODUCTION

GBS is an acute monophasic immune-mediated polyradiculoneuropathy with a mean age of onset of 40 years that affects slightly more males than females of all ages, races and nationalities. The worldwide incidence of GBS ranges from 0.6 to 4.0/100,000 people[1, 2, 3, 4, 5]. A systematic literature review of the epidemiology of GBS found the overall incidence of GBS to be 1.1 to 1.8/100,000 and it was however lower in children at 0.34 to 1.34/100,000[6]. In comparison to younger cases, the incidence of GBS increases after age 50 years from 1.7/100,000 to 3.3/100,000. Two-thirds of cases of GBS are associated with an antecedent infection. Most cases are sporadic although summer epidemics in Northern China of the axonal variant with Campylobacter Jejuni (C. Jejuni) infection were reported. While 5% of GBS in North America and Europe are due to axonal GBS[7], this variant is much more common in Northern China, Japan and the rest of America[8, 9, 10, 11]. There are no incidence studies of GBS in Indian population, but some case based studies have been reported.[12,13] The major predisposing causes include infections: *Campylobacter jejuni*,

How to cite this article: Vijay S Nagaonkar. A study of the factors associated with outcome in the patients of Guillain barre syndrome. *MedPulse International Journal of Medicine*. May 2019; 10(2): 158-161. https://www.medpulse.in/Medicine/

cytomegalovirus, Epstein-Barr virus and *Mycoplasma pneumonia*.[14] Some cases of GBS have been reported following influenza virus infection. So we have done study the factors associated with Outcome in the patients of Guillain Barre syndrome.

METHODOLOGY

This was a cross-sectional study carried out carried out in the patients suspected of Guillain Barre syndrome(GBS) were screened by Nerve conduction test (NCT) and those who are shown the features suggestive of GBS were included into the study, so during the one year period i.e. June 2017 to June 2018 38 patients suggestive of GBS were admitted to hospital were included into study by written and explained consent. The details of the patients like age, sex, clinical features, Outcome and associated factors with the poor outcome were noted. The data was entered to excel sheet and analyzed by excel software for windows 10.

RESULT

Table 1: Distribution of the patients as per the age

Age	No.	Percentage (%)
<10	3	7.89
10-20	5	13.16
20-30	11	28.95
30-40	9	23.68
40-50	4	10.53
50-60	3	7.89
>60	3	7.89
Total	38	100.00

The majority of the patients were having age of 20-30 were 28.95%, followed by 30-40 were 23.68%, 10-20 were 13.16%, 40-50 were 10.53%, <10, 50-60, >60 were 7.89%.

Table 2: Distribution of the patients as per the Sex

Sex	No.	Percentage (%)
Male	25	65.79
Female	13	34.21
Total	38	100.00

The majority of the patients were Male i.e. 65.79 % and Female were 34.21%

Table 3: Distribution of the patients as per the clinical features

Clinical features	No.	Percentage (%)
Tingling and pain in the soles and palms	35	92.11
Weakness of limbs	34	89.47
Ptosis/ophthalmoplegia	25	65.79
Facial nerve involvement	21	55.26
Sensory symptoms	19	50.00
Respiratory difficulty	11	28.95
Bulbar symptoms	7	18.42

Tingling and pain in the soles and palms found in 92.11% of the patients followed by Weakness of limbs in 89.47%, Ptosis/ophthalmoplegia in 65.79%, Facial nerve involvement in 55.26%, Sensory symptoms found in 50.00%, Respiratory difficulty found in 28.95%, Bulbar symptoms in 18.42%.

Table 4: Distribution of the patients as per the Outcome

Outcome	No.	Percentage (%)
Recovered	16	42.11
Recovered with residual weakness	12	31.58
On Ventilator	6	15.79
Death	4	10.53

The majority of the patients recovered i.e. 42.11%, followed by Recovered with residual weakness in 31.58%, On Ventilator in 15.79%, Death in 10.53%.

Table 5: Factors associated with the poor outcome

Poor outcome	No. (n=10) *	Percentage (%)
Age more than 40	6	60.00
Pneumonia	5	50.00
Pneumothorax	4	40.00
Presence of Autonomic dysfunction	3	30.00
Hypokalemia	2	20.00
Presence of Bleeding	1	10.00

(*patients with death or ventilator were considered as poor outcome; more than one factors associated with the patients With poor outcome so total may be more than 10) The factors associated with the poor outcome were like Age more than 40 were 60.00%, followed by Pneumonia in 50.00%, Pneumothorax in 40.00%, Presence of Autonomic dysfunction in 30.00%, Hypokalemia in 20.00%, Presence of Bleeding in 10.00%.

DISCUSSION

Guillain–Barré Syndrome (GBS) is an acute, immune-mediated polyradiculoneuropathy and an important cause of acute flaccid paralysis(AFP) worldwide. The number of cases of GBS increased following vaccination with the A76NJ 1976 influenza vaccine, leading to heightened awareness of GBS. There is a need for a valid, reliable, practical, and global consensus definition of GBS at various levels of certainty especially when new vaccines are developed and provided to large populations. Several case definitions of GBS existed prior to the 2009 H1N1 vaccination campaign including the widely employed Asbury–Cornblath case definitions, which involve ancillary diagnostic tests. More recently, the Brighton Collaboration developed case definitions of GBS with differing levels of diagnostic certainty. These case definitions have undergone limited field testing, particularly in resource-poor settings. GBS may be especially difficult to diagnose in resource-poor settings. Since the Brighton criteria include purely clinical case definitions as well as categories requiring further

specialized testing, the need for additional resources to achieve diagnostic certainty for GBS could be challenging for large resource-poor populations. In India, there is limited information available on the relative burden of GBS, particularly at a population level. Small case series of patients with GBS in India suggest that it may be an important cause of non-poliomyelitis AFP, including fatal AFP . It is unknown whether the axonal subgroups, mainly acute motor axonal neuropathy (AMAN), are more common than the acute inflammatory demyelinating polyneuropathy (AIDP) form, as has been seen in other developing countries[15–27] Of the patients with Guillain-Barré syndrome (GBS), 35% recover completely, 35% have minimal residual motor signs, and 30% have moderate to severe residual paresis. The optimistic view of complete recovery in majority of patients with GBS may not be true and patients with severe GBS are often left with significant residual deficits. The reported mortality varied between 2% and 18%, the lower mortality rates were in the treatment trials where patients with serious medical illness have been excluded. Inclusion of less severely affected patients may obscure the analysis of prognostic factors in the more severely ill. However, the reported mortality in ventilated patients was high, 20%-38.3%. Apart from improvements in intensive care unit (ICU) care and newer immunomodulatory therapies, other factors that have been found to impact the outcome include age, antecedent events, rapid progression of the disease, sensory disturbances, ventilatory requirement, bulbar dysfunction, low cerebrospinal fluid protein concentration **,** electrodiagnostic features suggestive of axonopathy [28]. The majority of the patients were having age of 20-30 were 28.95%, followed by 30-40 were 23.68%, 10-20 were 13.16%, 40-50 were 10.53%, <10, 50-60, >60 were 7.89%. The majority of the patients were Male i.e. 65.79 % and Female were 34.21% Tingling and pain in the soles and palms found in 92.11% of the patients followed by Weakness of limbs in 89.47%, Ptosis/ophthalmoplegia in 65.79%, Facial nerve involvement in 55.26%, Sensory symptoms found in 50.00%, Respiratory difficulty found in 28.95%, Bulbar symptoms in 18.42%.The majority of the patients recovered i.e. 42.11%, followed by Recovered with residual weakness in 31.58%, On Ventilator in 15.79%, Death in 10.53%. The factors associated with the poor outcome were like Age more than 40 were 60.00%, followed by Pneumonia in 50.00%, Pneumothorax in 40.00%, Presence of Autonomic dysfunction in 30.00%, Hypokalemia in 20.00%, Presence of Bleeding in 10.00%. These findings are similar to Archana B Netto [28] *et al* they found During the study period, 173 (118 men and 55 women; mean age of 33.5 ± 21 years) GBS patients were mechanically ventilated. A history of antecedent events was present in 83 (48%) patients. In addition to motor weakness, In all facial palsy was present in 106 (61%), bulbar palsy in 91 (53%), sensory involvement in 74 (43%), and symptomatic autonomic dysfunction in 27 (16%). The overall mortality was 10.4%. On univariate analysis the risk factors for mortality included elderly age (P = 0.014), autonomic dysfunction (P = 0.002), pulmonary complications (P = 0.011), hypokalemia (P = 0.011), and bleeding (P = 0.026). All these factors were significant in multivariate analysis except for bleeding from any site and hypokalemia.

CONCLUSION

It can be concluded from our study that the majority of factors associated with poor outcome were Age more than 40 Yrs., Pneumonia, Pneumothorax, Presence of Autonomic dysfunction, Hypokalemia Presence of Bleeding etc.

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Source of Support: None Declared
Conflict of Interest: None Declared