



## **Guillain Barre Syndrome: A Case Report and Literature Review**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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**Case Study**

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## **ABSTRACT**

**Introduction:** The arrival of Guillain-Barre Syndrome is sudden. It's a type of neuropathy caused by the immune system. Nutrition is very crucial. In impoverished countries, it is a disabling disease. Autoantibodies against diverse antigens can be seen in the outlying site. The occurrence links 0.4 to 1.7 million individuals per year.

**Case Presentation:** A 5-year-old boy was taken to the hospital with chief complaints of Weakness in bilateral upper and lower limbs, trouble in swallowing, inability to hold the neck, mouth-frothing, fever spikes. On physical examination, the patient has experienced weakness in bilateral upper and lower limbs, Bulbar weakness is present, pain experienced in both legs, the gag reflex is absent, In Cardiovascular System, S1 and S2 sound are present, In Respiratory System, Air entry is bilaterally equal, pupils are reflected light, tone, and power of upper and lower limbs are decreased, then treatment was started as soon as possible, he has not improved after receiving treatment, and the patient is on ventilator support, with treatment continuing until the end of my care.

**Conclusion:** In this study, we primarily focus on professional management, and outstanding nursing care may give the holistic care that Guillain Barre Syndrome requires while also effectively managing the challenging case. The comprehensive health care team collaborates to help the patient achieve their prior level of independence and satisfaction after a full recovery.

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## 1. INTRODUCTION

Guillain-Barre syndrome (GBS) is an autoimmune fulminant polyradiculoneuropathy that manifests as a severe fulminant polyradiculoneuropathy. Guillain-Barre Syndrome is the most prevalent cause of acute or subacute generalized paralysis, and it used to be second only to polio in terms of prevalence. Landry-Guillain-Barre-Strohl syndrome and acute inflammatory demyelinating polyneuropathy (AIDP) are other names of Guillain-Barre syndrome. Global annual incidence is estimated to be 0.6–2.4 cases per 100,000 individuals. Men are almost 1.5 times as likely as women to be harmed. In North America and Europe, Acute inflammatory demyelinating polyradiculoneuropathy (AIDP) is the most frequent subtype, accounting for 90% of all cases [1].

Guillain-Barre-Syndrome is the most common cause of neuromuscular paralysis. Guillain-Barre-Syndrome is divided into subtypes. Acute motor axonal neuropathy (AMAN) and acute inflammatory demyelinating polyneuropathy (AIDP) [2].

The weakening of the limbs, known as areflexia, and paralysis are the most common symptoms. Miller Fisher Syndrome is a condition that is similar to Acute motor axonal neuropathy and acute inflammatory demyelinating polyneuropathy, Miller Fisher Syndrome is one of the most frequent disorders. It's an immune-mediated illness. Ataxia, areflexia symptoms are seen in various diseases. Immunoglobulin and plasma exchange are used to treat this condition [2].

## 2. PATIENT INFORMATION

A 5-year-old boy was taken to the Acharya Vinoba Bhave Rural Hospital with the chief complaints of Weakness in bilateral upper and lower limbs, trouble swallowing, inability to hold the neck, frothing from the mouth, fever spikes. Guillain-Barre Syndrome was discovered in him. He showed no improvement after treatment, and the patient status was unstable; he couldn't maintain saturation, and the patient was intubated on Ventilator support. The Patient's family is from a middle-class background. His family members were free of both communicable and non-communicable diseases. He and his family had good interpersonal relationships with

relatives, neighbors, and other family members. The Ryle tube was inserted. He has a Fever (102°F) when he gets admitted. Blood test, cerebrospinal fluid examination, coagulation profile, liver function test, kidney function test, T3, T4, and TSH were done. Administration of immunoglobulin therapy, intravenous fluids, antipyretic, multivitamins, potassium, antibiotics, aminoglycosides, glucocorticoids, anti-allergic as per physician orders.

### 2.1 Physical Examination

On physical examination, the patient has experienced weakness in bilateral upper and lower limbs, Bulbar weakness is present, pain experienced in both legs, the gag reflex is absent, in the cardiovascular system, S1 and S2 sound is present, in the respiratory system, air entry is bilaterally equal (AEBE), pupils are reflected light, tone, and power of both upper and lower limbs are reduced, the plantar reflex is not examined, and then treatment was started as soon as possible.

### 2.2 Diagnostic Assessment

Blood test: Hb- 11.3%, Total RBC count- 4.36millions/cu.mm, Total WBC Count- 5100/cu.mm, Total platelet Count- 4.59lacs/cu.mm. In Cerebrospinal Fluid Examination, Glucose-CSF-72mg%, Protein-CSF-105mg/dl, Lactic Dehydrogenase-58l.U/L, PH- 7.5. Prothrombin time -control -12.50secs, Prothrombin time-patients-20.60secs, INR-01.64, APTT-Control-30 secs, APTT- Patient- 36.30secs in the Coagulation profile, Protein-9.9g/dl, Globulin-5.9gm/dl in liver function test. urea, creatinine, sodium, potassium, T3, T4 and TSH were all normal reading in the renal function test.

### 2.3 Medical Management

On admission, the patient is oriented with person and place; after getting treatment, he displays no response to treatment and does not sustain saturation, and his status is unstable. He was intubated on Ventilator support after an intravenous line was implanted. Inj. Potassium chloride 3ml in 300ml DNS IV HS, Inj. Meropenem 600mg IV HS, Inj. Amikacin 200mg IV OD, Inj. Vitamin k 5mg IV OD for three days, Inj. Multivitamin 3ml in 100ml Normal Saline IV OD, Inj. Fentanyl 15mg IV HS, Inj. Neomol 23ml IV SOS, Inj. Ceftriaxone 750mg IV BD, Syp.

Zincovit 5ml orally BD, Syp. Zinconia 5ml orally BD, Inj Globucef 10% 5gm in 50ml solution IV 2 hourly, Syp. Paracetamol 5ml orally SOS administered as per physician orders.

## 2.4 Nursing Management

Vital indicators were meticulously recorded. His condition is not stable; he shows no reaction to treatment and does not sustain saturation. In the intensive care unit, he is intubated on Ventilator support. Examine for all the reflexes. The nurse will need to work diligently to assist the Guillain-Barre Syndrome patients. Aspiration should be carefully assessed in patients who have difficulty swallowing due to muscles weakness. When the metabolic demand is significant, patients on Ventilator require Enteral and parental feeding to ensure that their caloric needs are satisfied. The early and gradual introduction of nasogastric tube feeding is recommended. A high protein, carbohydrate diet is recommended to prevent muscle atrophy and respiratory aid weaning. Vitamin B is recommended to aid in the healthy functioning of the nervous system. Excellent nursing care was provided as reported by patient family members reported to nursing staff. Increased respiratory function, promoting physical mobility, reduced anxiety and suffering, improved parental care, and reduced the risk of complications by intervening.

## 3. DISCUSSION

A 5-year-old boy was taken to Acharya Vinoba Bhave Hospital on 20/05/2021 with the chief complaints of Weakness in bilateral upper and lower limbs, trouble in swallowing, inability to hold the neck, frothing from the mouth, and fever spikes. After all of the investigation and physical examination were completed. He was diagnosed with Guillain-Barre Syndrome. he has not responded to treatment; he is not sustaining saturation, and the patient's state is not stable after treatment. In the intensive care unit, he is intubated and on Ventilator support. Excellent nursing care was given and continues to be provided till the end of my stay.

In this study, Guillain-Barre-Syndrome was used as part of the alpha-fetoprotein surveillance system in this investigation, which is a susceptible monitoring system intended for the global eradication of poliomyelitis that is in use in many countries, including the Sultanate of Oman, and is supervised by the World Health Organization. Guillain-Barre syndrome was found in 20% of AFP cases, while 45% of Guillain-Barre-Syndrome was seen with IVIG and

plasmapheresis. Administration of IVIG, a recurrence rate ranging from 1.4 % to 46.7%, and 16 were documented. Though there were initial indications of one modality of treatment having more relapses than the others, in an editorial on IVIG, plasmapheresis, and plasmapheresis followed by IVIG 383 patients randomly divided into three groups, suggested that the prognosis was similar in all three groups after four weeks of initial treatment. 17 after 48 weeks of follow up, these three regimens had similar results [3].

Although Guillain-Barre-Syndrome is the very modest cause of acute flaccid paralysis in children, it is the most common cause of acute flaccid paralysis in infants and children in the post-polio era. GBS affects individuals of all age groups. We recruited 20 participants aged 18 (range 16 months to 17 years). In our case study, the majority of them (55 percent) were in the six to 10 year age group. In their study of 61 children under the age of 15 years with Guillain-Barre-Syndrome, they discovered that the majority of the children with Guillain-Barre-Syndrome were under the age of four, with only one instance in the 10-15 year age range. According to the author, this was thought to be due to exposure to various diseases, toxins, and increased susceptibility of immature myelin to demyelination [4]. Our analysis discovered a male preponderance with a male to female ratio of 2.3:1. Their analysis discovered a male preponderance, with a male to female ratio of 1.5 to 1 [5].

The study collected information in the neurology department from 36 Guillain-Barre-Syndrome patients > eighteen years of age. The study aimed to identify and compare the clinical and epidemiological profile of GBS in adults with previous studies. Most studies have been performed on children, adults, and children alike. In this study, there were 22 (61.1%), <40 years of age, and 14 (38.8%) >40 years of age. Thirty-five years was the mean age. In most studies, the sex ratio showed slight masculine prevalence. This trend was also observed in the current study for men representing 21 (58.3%) GBS cases. In this study, the 14th prevalence Rainy (June – September) (38.8%) was observed, followed by winter (December – September) 11 (30.5 percent), GBS without seasonal preference was considered sporadic. In many studies, 40-70 percent of patients were admitted with or associated infection. 23 (63.8%) of patients had preceding infections in our

study.33 percent of respiratory and gastrointestinal infections were reported 22 % [6].

#### 4. CONCLUSION

Guillain-Barre-Syndrome is a neurological disorder. The peripheral region is disrupted in this disorder. The lower extremities grow weak as a result of this condition. The patient cannot walk, stand, or run because of a medical condition. It would be diagnosed after the required tests and labs were completed. This could be a life-threatening situation. Immunoglobulin IV, plasma exchange, and palliative care are all options for treatment. When IVIG is given early in the course, it improves recovery. Plasmapheresis may be a cost-effective treatment option for patients who have had a poor response to IVIG. Assisted ventilator and tracheostomy may be needed in some patients with respiratory paralysis. He showed no responsiveness to treatment after seeking treatment, and his condition was not stable, and treatment was still ongoing until my last day of care. The comprehensive health care team collaborates to help the patient achieve their prior level of independence and satisfaction after a full recovery.

#### CONSENT

As per international standard, parental written consent has been collected and preserved by the author(s).

#### ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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