



## **Guillain-Barré Syndrome: A Rare Case Report**

**Roshani Dhanvijay<sup>1\*</sup> and Ruchira Ankar<sup>1</sup>**

<sup>1</sup>*Department of Medical Surgical Nursing, Smt. Radhikabai Meghe Memorial College of Nursing, DMIMS (Deemed to be University) Sawangi Meghe Wardha, India.*

### **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

### **Article Information**

DOI: 10.9734/JPRI/2021/v33i47A33012

Editor(s):

(1) Dr. Paola Angelini, University of Perugia, Italy.

Reviewers:

(1) Soroush Soltani, Universiti Putra Malaysia, Malaysia.

(2) S. Thanuskodi, Alagappa University, India.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/74193>

**Case Study**

**Received 20 July 2021**  
**Accepted 27 September 2021**  
**Published 26 October 2021**

### **ABSTRACT**

**Introduction:** Guillain-Barré syndrome (GBS) is a rare neurodegenerative condition in which the immune system of the body mistakenly damages a portion of the peripheral nerve system. The initial signs are general weakness and numbness in the limbs. Initial symptoms occur within a few days or weeks of infection. These symptoms can spread fast, ultimately paralyzing the entire body. The peripheral system consists of the brain and spinal cord. The nerve network is found outside of the brain and spinal cord. GBS can range from a minor case with short weakness to a completely fatal paralysis that renders the individual unable to breathe on their own. Fortunately, even the most severe instances of GBS may be recovered from. Some people will remain feeble even after they have recovered.

The majority of patients reach the peak of their weakness within the first two weeks of symptoms appearing; by the third week, 90 percent of those affected are at their weakest. Symptoms of muscle weakness include difficulty with muscles of the eyes and vision, swallowing difficulties, difficulty in speaking, or chewing, pricking or pins and needles sensations in the hands and feet, pain that can be severe, especially at night, coordination problems, and unsteadiness, abnormal heartbeat/rate or blood pressure, problems with digestion and/or bladder control, and problems with digestion and/or bladder control.

**Background:** Guillain-Barré syndrome can affect anyone. It can attack at any age (though it is more common in adults and the elderly), and both sexes are equally susceptible to the condition.

GBS is predicted to afflict one in every 100,000 people each year. GBS affects between 3,000 and 6,000 persons in the United States each year.

**Case Presentation:** A 53 years old male patient came to the hospital with the chief complaint of weakness in all four limbs for 6 days. A patient was apparently alright 6 days back later he was experience weakness in the left side of the body following covid vaccination on 4<sup>th</sup> June, weakness was gradually progressive in nature and progress to the right side of the body after 2 days. Later on, 8<sup>th</sup> of June patient got admitted to GMC yavatmal where the routine investigation was done including a CT scan brain which normal and doctors ask for an MRI brain for which the patient and his relative had taken a DAMA discharge and brought the patient to AVBR Hospital. All investigation has been done after that the physician diagnosed the patient having Guillain barre syndrome. The patient weakness has been worse and the treatment start according to the disease condition. Medical treatment including physical therapy also been started to reducing physical weakness and the patient condition is improved day by day.

**Intervention:** The intervention was given to the patient such as injection ceftriaxone 1 gm BD, Inj pan 40 mg OD, Inj Emset 4 mg TDS, Inj optinurone 1 Amp in 100 ml normal saline.

*Keywords: Guillian barre syndrome; weakness; neurological disorder.*

## 1. INTRODUCTION

Guillain-Barré syndrome is a severe illness due to the abrupt and unexpected development of weakness and, in most cases, complete paralysis. Fortunately, 70% of patients having GBS typically recover completely [1]. Individual with respiratory failure generally survives with diligent intensive care and effective treatment of infection, autonomic dysfunction, and other medical problems [1].

Guillain-Barré syndrome is one of the numerous diseases characterized by weakness produced by immune-mediated peripheral nerve injury. While GBS develops quickly over days to weeks and typically cures on its own, other diseases develop gradually and might persist or reoccur [2].

The most frequent form of GBS observed in the United States is Acute inflammatory demyelinating polyneuropathy (AIDP). The immune system response in AIDP destroys the myelin covering and disrupts the nerve signal transmission. The immune response damages the axons in two further forms of Guillain-Barré syndrome, acute motor axonal neuropathy (AMAN) and acute motor-sensory axonal neuropathy (AMSAN) [3].

An auto-immune illness is characterized by the body's immune system attacks and destroying specific groupings of healthy tissue. Myelin sheaths protect nerve axons. Myelin aids in the transmission of signals through these long, thin extensions of nerve cells. In certain situations, GBS affects the axons of myelin sheaths.

The injury stops the nerves from delivering the signals to the spinal cord and brain, such as touch sensations. This results in a numbing sensation. Furthermore, the brain and spinal cord could no longer send impulses to the body, which results in muscular weakness [4].

## 2. CASE HISTORY

### 2.1 Patient Information

A 53 years old male patient came to the hospital with the chief complaint of weakness in all four limbs since 6 days. A patient was apparently alright 6 days back later he was experience weakness in the left side of the body following covid vaccination on 4<sup>th</sup> June, weakness was gradually progressive in nature and progress to the right side of the body after 2 days. Later on, 8<sup>th</sup> of June patient got admitted to GMC yavatmal where the routine investigation was done including a CT scan brain which normal and doctors ask for an MRI brain for which the patient and his relative had taken a DAMA discharge and brought the patient to our hospital. On the date, 12/06/2021 was admitted to the AVBR Hospital in the department of neurology unit 1. The patient GCS – E4V5M6. The pulse rate is 87 per min regular, normal volume, condition of vessel wall normal. Blood pressure was 130/80 mmHg and Spo2 was 99% and respiration was 20 per min. After a physical examination the treatment was started according to a patient condition like injection ceftriaxone 1 gm BD, Inj pan 40 mg OD, Inj Emset 4 mg TDS, Inj optinurone 1 Amp in 100ml normal saline. Medical treatment including physical therapy also been started to reducing physical weakness and the patient condition is improved day by day.

## 2.2 Medical/Surgical History

The patient was undergoing medical management. The intervention such as intravenously Injection ceftriaxone 1 gm BD, Inj pan 40 mg OD, Inj Emset 4 mg TDS, Inj optinurone 1 amp in 100 ml normal saline BD.

**Psychosocial history:** He maintains good interpersonal relationships between family members, neighbors, friends, and relatives.

**Environmental history:** The patient surrounding environment is good. There is a facility of a closed drainage system and proper disposal of waste.

## 2.3 Physical Examination

**General parameter:** Height: 170 cm, weight: 68 kg, body mass index (BMI): 23.5 kg/m<sup>2</sup>

**Vital sign:** Temperature: 99.2 °F, pulse: 87 beat / min, respiration: 20 breath/min, blood pressure: 130/80mmof Hg, Spo2 – 99%, No pallor, Icterus, Cynosis, Clubbing.

**Integumentary:** No skin lesions, dry skin

**Musculoskeletal system:** His body mass index (BMI) is 23.5kg/m<sup>2</sup>. Slow range of motion (ROM). Muscle weakness is present and gradually progressive in nature and progress to the right side of the body.

**Speech:** Altered speech and sound is present.

## 2.4 Diagnosis Assessment

**Blood investigation: In complete blood count (CBC):** Hemoglobin is 14.2 mg/dl, Mean corpuscular volume (MCV) is 78.8 fl (78-98 fl), total RBC count is 5.62 m/ul, WBC is 26200 (4500-11,500k/ul), total platelet count is 139,000/ml (150,000 to 450,000), Hematocrit (Hct) Levels is 44.3 % (37 %-47 %), monocytes is 04 %(00-15%) , Granulocytes is 85 % (Lymphocytes is 10 %(20%-40%), red cell distribution width (RDW) is 14.9 (11.6-14.8), Eosinophils is 01% (1-5%) basophils is 00 % (0-1 % ). **In kidney fuction test (KFT):** urea is 52 (9.81 – 20.1 mg/dl), creatinine is 1.1 mg/dl (0.7-1.4 mg/dl), sodium is 139 meq/ l (135-145meq/l), potassium 4.2 (3.5-5.5 meq /l). **In liver fuction test (LFT):** alkaline phosphates is 62 (32-45 g/l), Alanine transaminase (ALT) is 15 IU/L (0-50IU/L), aspartate aminotransferase,(AST) is 109 IU/L (10-40 IU/L),

total protein is 7.2 (23-38 g/dl), total bilirubin is 0.6 g/dl (1-1 g/dl ), conjugated bilirubin is 0.1 mg/dl (0-0.25 mg/dl), unconjugated bilirubin is 0.5 mg/dl (0.2-0.7 mg/dl), globulin is 2.7.

**In Urine examination** urine albumin is nil, urine sugar is nil, and pus cell is 1.2 cell /hpf.

In peripheral smear, platelets – reduced on smear. APC- 1,20,000 cells /mm<sup>3</sup> as per cell counter. WBCs- Neutrophils leucocytosis upto hand forms.

**Microbiology report:** Growth of oxacillin resistant (MRSA) coagulase-positive staphylococci.

## 2.5 In Pharmacological Management

Treatments for Guillain-Barré syndrome can help to alleviate symptoms and hasten recovery.

The majority of individuals are treated in hospitals and often require hospitalization for a few weeks to several months.

## 2.6 Intravenous Immunoglobulin (IVIG)

Intravenous immunoglobulin has been the most widely used therapy for Guillain-Barré syndrome (IVIG).

IVIG is a therapy produced from healthy antibodies found in donor blood. These are administered to assist in preventing dangerous antibodies from harming the nerves.

## 2.7 Plasma Exchange (Plasmapheresis)

Plasma exchange, commonly known as plasmapheresis, is utilized instead of IVIG.

This involves being attached up to the machine that collects blood from a vein and filtering away the harmful antibodies that target the nerves while returning the blood to the body.

The majority of patients require therapy for about 5 days [5].

## 2.8 Nursing Management

First of all makes nursing assessment with the help of observation to check the consciousness, weakness, speech, vital sign, the reaction of a pupil, size of a pupil. Improved respiratory

function, promotion of physical mobility, prevention of contractures, decreased anxiety and pain, relief of urinary retention, improvement of parental care, and prevention of complications [6].

## 2.9 Nursing Diagnosis

### 2.9.1 Ineffective breathing pattern

#### Intervention:

- Assess the frequency, symmetry, and depth of the breathing. Observed Increased labor of breathing, as well as skin color, temperature, and pupil dilation.
- Observed the indications of respiratory exhaustion, such as shortness of breath, poor attention span, and coughing difficulty.
- Listen for changes in lung sounds and notify the doctor right once.
- Check the client's arterial blood gases and oxygen saturation levels.
- Maintain a 35-45° elevation of the head of the bed.

### 2.9.2 Acute pain

#### Intervention:

- Assess the level of pain and ability to participate in activities.
- Administer analgesics based on pain assessment and respiratory status; Monitor side effects after administration.
- Apply a moist warm compress to painful areas as needed.
- Provide support to extremities and maintain clean, comfortable bed using egg-crate mattress and padding to bony prominences as needed; Reposition client every 2 hours, use good postural alignment, assist the patient with passive range of motion.

### 2.9.3 Impaired physical mobility

#### Intervention:

- Assess the motor strength or functional level of mobility.
- Monitor nutritional needs as they associate with immobility.

- Place the client in a position of comfort. Provide frequent position changes as tolerated.
- Administer heparin as ordered.- Low-molecular-weight heparin (LMWH) is administered in the prophylaxis of deep vein thrombosis.
- Provide padding to bony prominences such as elbow and heels [7].

## 2.10 Physiotherapy Management

Aims of physiotherapy management are:

1. Regain the patient's independence with everyday tasks.
2. Retrain the normal movement patterns.
3. Improve patient's posture.
4. Improve the balance and coordination
5. Maintain clear airways
6. Prevent lung infection
7. Support joint in functional position to minimize damage or deformity
8. Prevention of pressure sores
9. Maintain peripheral circulation
10. Provide psychological support for the patient and relatives.

## 3. CONCLUSION

Guillain-Barre syndrome is commonly seen in the young population. The most common symptom of Guillain-Barre syndrome was ascending paralysis. The hospital mortality rate of patients with GBS was 6.45%.

## CONSENT

While preparing the case report and for publication patient's informed consent has been taken.

## 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.

## REFERENCES

1. Shah PM, Dhakre VW, Veerasuri R, Bhabhor A. Dysautonomia and

- hyponatraemia as harbingers of Guillain-Barre syndrome. *BMJ Case Reports CP*. 2019;12(4):e226925.
2. Goodfellow JA, Willison HJ. Guillain–Barré syndrome: A century of progress. *Nature Reviews Neurology*. 2016;12(12):723-31.
  3. Dourado ME, Félix RH, da Silva WK, Queiroz JW, Jeronimo SM. Clinical characteristics of Guillain–Barré syndrome in a tropical country: a Brazilian experience. *Acta neurologica scandinavica*. 2012;125(1):47-53.
  4. Collinger JL, Foldes S, Bruns TM, Wodlinger B, Gaunt R, Weber DJ. Neuroprosthetic technology for individuals with spinal cord injury. *The Journal of Spinal Cord Medicine*. 2013;36(4):258-72.
  5. Van Doorn PA, Ruts L, Jacobs BC. Clinical features, pathogenesis, and treatment of Guillain-Barré syndrome. *The Lancet Neurology*. 2008;7(10):939-50.
  6. Haldeman D, Zulkosky K. Treatment and nursing care for a patient with Guillain-Barré syndrome. *Dimensions of Critical Care Nursing*. 2005;24(6):267-72.
  7. Caixeiro-Brandao SM, Coll JO, Medeiros AA, Lima AA, do Vale BM, de Oliveira RS. The challenge for identifying the nursing diagnosis of Guillain-Barré Syndrome. *Journal of Nursing UFPE on Line*. 2011; 6(1):32-40.

---

© 2021 Dhanvijay and Ankar; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Peer-review history:*

*The peer review history for this paper can be accessed here:*

*<https://www.sdiarticle4.com/review-history/74193>*