ORIGINAL RESEARCH PAPER

General Medicine

SUCCESSFUL TREATMENT OF GUILLAIN-BARRÉ SYNDROME WITH INTRAVENOUS IMMUNOGLOBULIN: A CASE REPORT

KEY WORDS:

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ABSTRACT

Guillain-Barre Syndrome (GBS) is an autoimmune disorder that affects the peripheral nervous system, leading to progressive weakness and sensory disturbances. We report a case of a 62-year-old female who presented with sudden onset, progressive weakness in all four limbs, which was distal to proximal, and progressed from lower to upper limbs. The patient also had tingling sensations in all four limbs, followed by difficulty in performing routine activities. She was diagnosed with GBS based on clinical, nerve conduction studies and cerebrospinal fluid analysis. The patient was treated with intravenous immunoglobulin therapy and physiotherapy, leading to gradual improvement in the lower limb power after a week of therapy.

INTRODUCTION

Guillain-Barre Syndrome (GBS) is an acute, immune-mediated polyradiculoneuropathy that affects the peripheral nervous system. The hallmark features of GBS are symmetrical ascending weakness and areflexia, which can progress rapidly and lead to respiratory failure and other serious complications. While the exact cause of GBS is unknown, it is thought to be triggered by an autoimmune response, often following a recent infection or vaccination. GBS affects all age groups, with a slight male predisposition, and its incidence ranges from 0.89 to 1.89 cases per 100,000 person-years in Western countries.[1-3] Early recognition and management of GBS is crucial in preventing complications and improving outcomes. This report provides a case of a 62-year-old female presenting with GBS, highlighting the clinical features, diagnosis, and management of this condition.

CASE REPORT

A 62-year-old female presented to DY Patil hospital, Navi Mumbai, Maharashtra with weakness in all four limbs since 10 days. She was apparently alright 10 days back when she developed sudden onset, progressive weakness in all four limbs, which was distal to proximal and progressed from lower to upper limbs. The patient also had tingling sensations in all four limbs, followed by difficulty in performing routine activities. She was unable to walk and has been bed bound since then. The patient denied any history of preceding fever, loose stools, abdominal pain, cough, trauma, seizures, loss of consciousness, headache, or bladder symptoms. The patient had a history of hypertension for the past 10 years and was on Tab Amlodipine 5mg 1-0-0. There were no other comorbidities or surgeries in the past, and no similar complaints were present in the family. The patient was conscious, cooperative, and well-oriented to time, place, and person. She was unable to get up from a sitting position and was brought in a wheelchair. The vital signs were stable, and there was no pallor, icterus, edema, lymphadenopathy, cyanosis, or clubbing. The higher mental functions, appearance, and behavior were normal. The cranial nerves examination was normal. The nutrition status was good with no wasting or hypertrophy of muscles.

Clinical Findings

The tone was decreased in both upper and lower limbs, and the power was 4/5 in all joints and movements in the upper limbs and 2/5 in all joints and movements in the lower limbs. The deep tendon reflexes were absent in both upper and lower limbs, and bilateral plantars were absent. The sensory system was intact, and the electrolytes were normal. The cerebrospinal fluid (CSF) analysis revealed albuminocytological dissociation, with elevated protein levels and normal cell count. The nerve conduction studies of all four limbs showed reduced nerve conduction velocity, prolonged distal latency, and prolonged F wave latency, suggestive of widespread predominantly sensorimotor demyelinating + axonal polyradiculoneuropathy.

Diagnosis and Management

Based on the clinical presentation, nerve conduction studies and cerebrospinal fluid analysis the patient was diagnosed with GBS. The patient was started on intravenous immunoglobulin (IVIG) therapy at a dose of 0.4 g/kg/day for five days and physiotherapy. The patient's weakness gradually improved, and her lower limb power started improving after a week of therapy.

DISCUSSION

Guillian-Barre Syndrome (GBS) is an uncommon but serious autoimmune disorder that affects the peripheral nervous system. It is characterized by rapidly progressive weakness in the limbs that can spread to the muscles involved in breathing, which may lead to respiratory failure and the need for mechanical ventilation. Although the exact cause of GBS is unknown, it is believed to be triggered by infections or vaccinations. The diagnosis of GBS is based on clinical features, nerve conduction studies, and cerebrospinal fluid analysis.

GBS can present in several clinical variants, including:

1. Acute inflammatory demyelinating polyneuropathy (AIDP): This is the most common variant of GBS and is characterized by demyelination of the nerves in the peripheral nervous system. It typically presents with symmetrical weakness and sensory disturbances in the limbs, and can progress to involve the respiratory muscles.
2. Miller Fisher syndrome (MFS): This variant of GBS is characterized by a triad of symptoms, including ophthalmoplegia (paralysis of eye muscles), ataxia (lack of coordination), and areflexia (absence of reflexes). It

typically presents with weakness in the limbs that is less severe than in AIDP.
3. Acute motor axonal neuropathy (AMAN): This variant of GBS is characterized by axonal degeneration of the nerves in the peripheral nervous system. It typically presents with pure motor weakness, and sensory disturbances are less common.
4. Acute motor-sensory axonal neuropathy (AMSAN): This variant of GBS is similar to AMAN, but also involves sensory nerves, leading to both motor and sensory symptoms

Treatment options include intravenous immunoglobulin (IVIg) therapy, plasmapheresis, and supportive care. Evidence on treatment efficacy in patients who can still walk independently is limited, but treatment should be considered, especially if they have rapidly progressive weakness or other severe symptoms. There are two main immunomodulatory treatment options for GBS patients: IVIg and plasma exchange (PE). Clinical trials have demonstrated a treatment effect for IVIg when started within 2 weeks of the onset of weakness and for PE when started within 4 weeks. Beyond these time periods, evidence on efficacy is lacking. According to several studies, PE and IVIg were found to be equally effective in the management of GBS. However, IVIg is more widely used due to its higher availability, lack of need for specialized equipment, and lower risk for adverse effects. The choice between PE and IVIg may depend on the patient's clinical condition and local factors. Our patient showed significant improvement with IVIg treatment.[4-7] Further comparative studies are needed to evaluate the efficacy of these two treatment options and to determine whether there are any differences in response in each variant of GBS.

In this case, the patient's prompt diagnosis and initiation of therapy with IVIG helped in the gradual improvement of her symptoms. Physiotherapy is also an important aspect of the management of GBS, as it helps in maintaining muscle strength and function. The prognosis of GBS is usually good, with most patients recovering completely or with mild residual weakness. However, a few patients may have long-term disability or may require prolonged mechanical ventilation.

CONCLUSION

Based on the case report, the patient presented with symptoms consistent with GBS. The patient was treated with intravenous immunoglobulin (IVIg) therapy and showed significant improvement in their symptoms. The case highlights the importance of early recognition and prompt treatment of GBS to prevent further progression and complications. Early diagnosis and prompt initiation of treatment can improve the patient's outcome. Clinicians should consider GBS in patients presenting with weakness and sensory disturbances, especially in the setting of preceding infections or vaccinations.

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