Nursing Care of Guillain-Barre Syndrome

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Guillain-Barre Syndrome is a clinical Syndrome of unknown cause involving the peripheral cranial nerves. It is also termed as post infection polyneuritis or polyradiculoneuropathy. It usually affects the age group of 20 to 50 years. Males are predominantly affected. This article makes an attempt to understand various aspects of the disease, and complications, if any, with the help of a case study, while discussing nursing care that such patients need.

A Case Study

Mr X. aged 19 years was admitted in Medicine Unit in Jipmer Hospital, Pondicherry, on 4th April. He was diagnosed as a case of Guillain Barre syndrome. The diagnosis was confirmed by various investigations. He underwent plasmapheresis and active physiotherapy was given. He was discharged on 29th April after complete recovery.

Assessment of the Patient

History

- Inability to walk for past 7 days.
- Progressive weakness from lower limbs to upper limbs.
- Couldn't get up from lying down position.
- Loss of sensation in both lower limbs.
- Had dog bite 5 months back in left leg and had ARV (3 doses).

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On Examination

- Involvement of upper limbs, lower limbs, trunk musculature present.
- Hyporeflexia of both upper limbs.
- Bilateral Facial nerve palsy.
- Diaphragmatic and intercoastal action adequate.
- Power grip 50%.
- No corneal exposure.
- B.P. - 120 (Supine)/80 (Prone)

Etiology

1. Antecedent Infection: Guillain-Barre syndrome usually occurs after a primary viral infection, Hepatitis, HIV, Lupus, Lymphoma and rarely following vaccination or surgery.
2. Toxin: Diptheria toxin, alcohol, arsenic or lead.

Pathophysiology

The principal pathological change is an autoimmune inflammatory response within multiple spinal roots and peripheral nerves. The Lymphocytic infiltration is often found in peripheral nerves which affects the myelin leading to multifocal demylination in spinal roots and peripheral nerves. In long lasting cases secondary axonal degeneration occurs.

Clinical Manifestation

The initial neurologic symptoms are paraesthesia (tingling and numbness) and muscle weakness of the legs which may progress to the upper extremities trunk and facial muscles giving an ascending flaccid paralysis leading to quadriparesis. Eventually deep tendon reflexes are lost. The cranial nerves are frequently affected, leading to paralysis of the occular, facial and oropharyngeal muscles and thus causing marked difficulty in talking, chewing and swallowing. Autonomic dysfunction frequently occurs and takes the form of over-reactivity or under-reactivity of the sympathetic or para-sympathetic nervous system manifested as disturbances of heart rate and rhythm, blood pressure changes (transient hypertension, orthostatic hypotension) sinus tachycardia and variety of vasomotor disturbances. In acute cases muscles of respiration and bulbar musculature are involved leading to respiratory insufficiency or failure. Miller Fisher syndrome or opthalmoplegia and dysphagia may occur and weakness of extra occular muscles may be seen. Sphincters are rarely involved, though retention of urine may occur. Deep pain in large muscles like thigh and leg is common.

Diagnostic Evaluation

Haemogram evaluation, Blood urea, sugar and electrolytes ECG were done which showed no abnormal changes.

Blood Grouping - BRh+

CSF Analysis:	(Normal Value)
CSF Protein - 318 mg/L	150-300 mg/l
CSF Sugar - 47 mg/dl	50 70 mg/dl
CSF Chloride-116 mEq/l	100-300 mEq/l

Funduscopy

- Fundus both eyes normal.
- Lagoptholmos present.
- Bitot's spot present.
- Bells phenomenon adequate.

- Facial nerve palsy present, more on left side than on right side.

ECG was taken twice to rule out vasomotor disturbances. Spinal fluid showed increased protein concentration. Electro physiologic testing demonstrated marked slowing of nerve conducting velocity. A sural nerve biopsy was done to establish the cause.

Management

1. Medical Management

Guillain-Barre syndrome has spontaneous gradual recovery over a period of weeks or months. It is usually taken as a case of medical emergency.

2. General Management

1. Rest in bed should be ensured as long as weakness of trunk muscle persists. Vital capacity should be measured every 2-4 hours in early stages.
2. Analgesic like aspirin or paracetamol is given to relieve pain. Hot packs may be helpful.
3. Corticosteroids for patients with bulbar symptoms or severe generalised weakness.
4. Antibiotics to prevent secondary infection.
5. Vitamin B_1-100 mg and vitamin B_{12}-1000 mg daily.
6. Supportive treatment like Intervenous infusion or intragastric feeding may be necessary.
7. Proponanol is given in Vasomotor disturbances.
8. Plasmapheresis or plasma exchange is very helpful in acute cases and is the current treatment in use. In this the whole blood is removed in intervals and is replaced with packed cell and fresh frozen plasma. Plasmapheresis produces a temporary reduction in circulating antibodies which limits the deterioration and demylination.

   Plasmapheresis was done for the patient. Eight times plasma exchange was done.
9. Respiratory insufficiency may require tracheostomy or institution of intermittent positive pressure respiration.
10. Physiotherapy plays an important role in rehabilitation of the patient. Early active and passive movement exercises are advised.

Nursing Management

The patient with Guillain Barre syndrome is absolutely dependent on Nursing surveillance with care, for recovery.

1. Psychological support is to be given.
2. Complete bed rest is to be ensured in case of weakness of trunk muscles.
3. Vital capacity should be monitored round the clock for signs of impending respiratory failure. If the patient has difficulty in coughing and swallowing, this may lead to aspiration of saliva. Intermittent suction is to be applied. In respiratory failure Tracheostomy is done or the patient is put on intermittent positive pressure respirator. Care of Tracheostomy is given in case of tracheostomy patients. To establish communication lip reading and picture cards are helpful.
4. Hot water bags may be applied to relieve pain.
5. In paralysed patients padding should be placed over the elbows and head of fibula to prevent compression neuropallices. Prevention of pressure sore is a major nursing challenge. Back care and changing of position is very important.
6. If the patient experiences orthostatic hypotension tilt table may help them to assume an upright position.
7. Attention should be paid to adequate nutrition and prevention of muscle wasting paralytic ileus may result from insufficient parasympathetic activity. Intravenous infusion or Nasogastric feeding may be given when the patient can swallow normally. Oral feeding can be resumed gradually.
8. Splints are to be provided to protect foot and wrist drops. Bed cradles to protect the feet from the weight of the bed clothes.
9. During plasmapheresis patients should be closely observed for hypersensitivity reaction.
10. Passive movements of paralyzed extremities should be encouraged.
11. Personal hygiene, bladder and bowel care should be given in case of unconscious patients.
12. As the patient recovers he should be involved in relaxation exercises, distraction techniques and positive feedback. Reassurance is very essential, as was done for Mr. X.

Health Education

After discharge, the patient was encouraged to continue with the exercise programme. He was also cautioned about avoiding fatigue and over working of muscles. "Take one day at a time" is good advice when the patient is overwhelmed with the problem of fatigue.

Complication

1. The life threatening complication is acute respiratory failure.
2. Cardiac dysarrythmias.
3. Deep venous thrombosis and pulmonary embolism are constant threats to any immobilized or paralyzed patient.

Bibliography

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