Guillain –Barre Syndrome

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Acute In-Patient Rehabilitation

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Objectives

- Define GBS and its incidence and cause.
- List physiological threats to various organ systems caused by GBS.
- Describe rehabilitation care priorities of the patient with Guillian Barre’

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Definition

- ACUTE INFLAMMATORY DEMYELINATING POLYNEUROPATHY
- BODY'S IMMUNE SYSTEM ATTACKS ITS OWN NERVES, ESPECIALLY PERIPHERAL NERVES.

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INCIDENCE

- 1-2/100,000 PEOPLE PER YEAR
- INCREASES WITH AGE
- PEAK AGE- 50-74 YEARS
- RECURRENCE RATE IS 3%
- MORTALITY AND MORBIDITY- 4-8 % EVEN AFTER EFFECTIVE THERAPY
- NO SEX OR GEOGRAPHIC PREDILICTION

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CAUSE

- UNKNOWN
- PRECEDED BY INFECTIOUS ILLNESS SUCH AS RESPIRATORY INFECTION OR STOMACH FLU WITHIN 3 DAYS TO 6 WEEKS
- OTHER PRECEDING FACTORS LIKE TRAUMA, RECENT SURGERY

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SYMPTOMS

- PARESTHESIAS OF FINGERS AND TOES
- WEAKNESS OF MUSCLES
- UNSTEADYOR INABILITY TO WALK
- SEVERE PAIN
- LOSS OF BLADDER AND BOWEL CONTROL
- DIFFICULTY BREATHING

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CLINICAL OR NATURAL COURSE

- PROGRESSION UP TO 2 WEEKS
- PLATEAU FROM 2-4 WEEKS
- RECOVERY AFTER 4 WEEKS (67 % OF PATIENTS-RECOVERY UNDERWAY)

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EMERGENCY MEDICAL HELP

- ASCENDING SYMPTOMS OF PARESTHESIAS
- RAPIDLY SPREADING SYMPTOMS
- PARESTHESIAS INVOLVING BOTH FEET AND HANDS
- DIFFICULTY SWALLOWING
- CHOKING ON SALIVA

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SUPPORTIVE CARE

- Extremely important
- Nursing major role
- 30% of patients develop neuromuscular respiratory failure requiring mechanical ventilation
- Autonomic dysfunction needing ICU monitoring

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DIAGNOSIS

- Proper and detailed History
- Spinal tap – CSF reveals elevated protein
- EMG/NCV testing

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TREATMENT

- Aim to decrease severity and suffering
- Disease modifying treatment
  - Plasma exchange
  - IVIG

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AAN Guidelines

- IVIG/PE hasten recovery
- Beneficial effects of PE/IVIG are equivalent
- Combining the 2 treatments is not beneficial

AAN Guidelines

- Plasma exchange:
  - Non- ambulatory adult GBS patient with 4 weeks of onset of neuropathic symptoms
  - Ambulatory patients with in 2 weeks of onset of neuropathic symptoms

4-6 treatments over 8-10 days.

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AAN Guidelines

- IVIG:

- Non ambulatory adult GBS patients with in 2-4 weeks of onset of Neuropathic symptoms.

  Treatment for 5 days

  0.4 g/Kg/day

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Side-effects of PE

- Hypotension
- Sepsis

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Side- Effects of IVIG

- Aseptic Meningitis
- Acute Renal Failure
- Rarely Stroke secondary to Hyperviscocity
- Anaphylaxis secondary to IgA deficiency

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Supportive Care

- DVT PPx
- Bladder / Bowel care
- PT/OT/ST as indicated
- Pain Control
- Psychological support

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Respiratory Management

- Monitor for impending Respiratory failure
- 15-30% need ventilator support
- Monitor swallowing problems for risk of aspiration
- Inability to clear secretions

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Impending Respiratory Arrest

- FVC <20 ml/Kg
- Maximum Inspiratory pressure < 30 cm of H2O
- Maximum expiratory pressure < 40 cm of water

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Respiratory Failure Predictors

- Time of onset to admission < 7 days
- Inability to cough
- Inability to stand
- Inability to lift elbows
- Inability to lift the head
- Increased liver enzymes

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Continued…

- If at least 4 of the 6 above predictors are present, patient requires mechanical ventilation in 85 % of patients
- Overall 43 % of patients admitted will need mechanical ventilation

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Respiratory Management

- Keep HOB elevated 30 Degrees to promote drainage and lung expansion, if not contraindicated
- Monitor for aspiration
- Monitor for difficulty breathing/tachypnea

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Autonomic Dysfunction

- Dysautonomia in 70% of patients
- Tachycardia
- Urinary retention
- Elevated or low BP
- Orthostatic BP
- Bradycardia
- Arrhythmias
- Ileus/ loss of sweating.

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Cardiovascular Management

- Instituted at the time of admission
- Monitoring of BP and heart rate in severely affected patients
- Monitoring is needed until weaned off the vent

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Cardiovascular Management

- Quadriplegic patients should not be left unattended
- Maintain intravascular volume
- Avoiding medications which lower BP
- Arrhythmias occur frequently during suctioning
- Monitor BP and electrolytes during Plasma exchange

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Cardiovascular Management

- Paroxysmal HTN- 24 %
- Orthostatic Hypotension- 19%
- Sustained HTN-3%

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Arrhythmias

- Sinus tachycardia- 37%- no treatment
- Severe Bradycardia/asystole in 4% of GBS patients
- Others- A fib, A flutter, V Tach, St and T wave abnormalities

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Bladder care

- Monitor Urinary retention which is very common
- Need for catheter and catheter care

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Bowel care

- Adynamic Ileus is common
- Daily abdominal auscultation is recommended
- Treatment is Erythromycin or Neostigmine

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Skin Integrity

- Secondary to immobility
- Skin assessment esp over body prominences
- Prevent areas of moisture to skin
- ROM exercises to prevent contractures

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Nutrition

- Monitor daily weights, serum albumin and total protein
- ST eval for gag reflex, aspiration and swallowing
- Initially pt's may need enteral feeding to prevent aspiration
- Monitor gastric motility and dysphagia

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Nutrition

- Optimal Nutrition is essential for recovery and good prognosis as malnutrition will delay recovery

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Pain

- Neuropathic pain in about 40-50% of patients with GBS
- Gabapentin, carbamazepine, epidural morphine in ICU setting
- Long term treatment with tricyclics, tramadol, gabapentin, carbamazepine, pregabalin
- Massage, reposition, music, biofeedback, ice and heat etc.

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Cranial Nerve Involvement

- 85 % of cases
- Facial nerve is commonly involved which results in inability to smile, frown, whistle, use of straws
- IX and X cause dysphagia, laryngeal paralysis, autonomic dysfunction
- Keep eyes moist/artificial tears/eye mask

Psychological Issues

- Fear
- Anxiety
- Depression
- Feelings of being trapped and isolated in their body

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Psychological issues

- Patients who cannot communicate easily, can still hear, see, think and have sensation.
- So please be cautious in your approach to these patients

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Communication

- Communication Board for patients who can make a small puff of air, move lips, blink, click their tongue
- Keep clock and calendar in view
- Don’t leave patient alone
- Leave call device accessible (modify, prn)
- Open visitation for family and significant others

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Sleep Pattern

- Monitor for sleep pattern disturbances which could be secondary to pain or dysautonomia etc.
- Schedule regular rest periods to prevent ICU delirium

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Anxiety

- Monitor heart rate and BP
- Consider antidepressants or anxiolytics

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Ventilatory care

- Wean patient off vent when FVC > 30 % and Negative inspiratory force is 20 cm H2O or more
- After extubation:

  - continue pulmonary toilet

  - incentive spirometry

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Acute Care Rehab

- Gentle Strengthening and ROM exercises
- Proper limb positioning
- Posture

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Post Acute Care Rehab

- Inpatient Rehab Unit
- PT/OT/ST as needed
- Continued Rehabilitation Nursing care
- Prevention of contractures, monitor skin breakdown and monitor for infections

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Poor Prognostic factors

- Older age
- Rapid onset (< 7 days)
- Severe muscle weakness
- Need for vent support
- Average distal CMAP < 20 %
- Preceding diarrheal illness

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Long Term Outcomes

- Patients walk independently

  - in 6 months- about 80%

  - 1 yr- about 84 %
- 14% - severe motor problems
- 5-10 %- incomplete recovery with need for prolonged vent dependence
- 4-5 % Mortality

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Causes of Death

- Acute Respiratory Distress Syndrome
- Sepsis
- PE
- Cardiac arrest- un explained

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Relapses

- 10% of patients have a relapse
- 2% develop CIDP

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Immunization and GBS

- Not recommended during acute phase and up to 1 year after onset of GBS
- After that, given on need basis

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Thank You

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