

CARDIOVASCULAR COMPROMISE



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Cardiovascular complications in the acute stage following spinal cord injury require prompt medical attention to avoid neurological compromise, morbidity and death.

- Neurogenic shock
- Bradycardia
- Potential for DVT/PE
- Hypotension
- Autonomic dysreflexia
- Hypothermia
- Cardiac arrest (rare)



NEUROGENIC SHOCK



Neurogenic shock

- Neurogenic shock occurs during the acute phase and can last up to six weeks
- It is a transitory suspension of function and reflexes below the level of injury.
- Individuals with cervical cord injury may present with a bradycardia of 45-60 and a systolic of 80-90



Neurogenic shock

- In the absence of clearly established and significant blood loss, any fluid replacement should be moderate
- Increased production of ADH results in fall in urine output (30-50mls per hour produced)
- Temperature



BRADYCARDIA



Bradycardia

- Bradycardia is a result of the disruption of spinal pathways leading to reduced overall sympathetic activity and unopposed parasympathetic activity.
- Atropine should be kept readily available at the bedside
- Salbutamol nebulisers
- EWS – Baseline observations and vigilance
- Anticipation and documentation of triggers



Bradycardia

TRIGGERS

- Tracheal suction
- Prolonged flat bed rest
- A rapid change in position
- Positioned on the left side for prolonged periods of time
- A cervical collar that is applied too tightly ,may induce syncope
- Adverse drug effects
- Underlying infection
- Hypovolaemia



DEEP VEIN THROMBOSIS

North West Regional Spinal Injuries Centre
Southport & Ormskirk NHS Trust



Deep Vein Thrombosis

- The risk of DVT is highest within the first two weeks of injury.
- The incidence of DVT and PE in patients with complete spinal cord injury is three times higher than that of the general public
- DVT can occur during either the acute or chronic phase of SCI, despite anticoagulation therapy



Deep Vein Thrombosis

- After SCI, prophylactic treatment is usually recommended for 3 months, dependent on individual circumstances
- A Doppler scan ordered if DVT is suspected and anticoagulation therapy reviewed.
- EWS to monitor temperature
- Awareness of signs and symptoms of PE



HYPOTENSION



Hypotension: Signs & Symptoms

- Visual disturbance
- Tinnitus
- Pallor
- Tachycardia
- Low temperature
- Dizziness
- Sweating



Hypotension: Signs & Symptoms

- Loss of balance
- Faints
- Mild confusion
- Nausea / vomiting
- Dilated pupils
- Unresponsiveness
- Difficulty in breathing



Hypotension : Management

- Sitting up slowly and in stages
- Abdo binders /TED stockings/flotron boots (Prevents pooling of blood in the abdomen and lower extremities)
- Tilt chair backwards
- Raise legs
- A reclining wheelchair with elevating foot rests



Hypotension : Management

- Produce a spasm by pulling the legs apart
- Encourage patient to move arms if possible
- Rub calves of legs (Stimulates circulation)
- No large meals just prior to getting up in chair
- Check temperature
- Return to bed if no improvement



Hypotension : Management

- Ephedrine 15 – 30mgs prior to getting up (Dilates bronchial passages. Therefore allows increased O₂ into the circulation and constricts blood vessels - causes increase in B/P)
- Midodrine
- Symptoms usually improve with management and over time



THANK YOU

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