

NEUROLOGICAL ASSESSMENT

Primary Care Paramedicine

Module: 13

Section: 08a

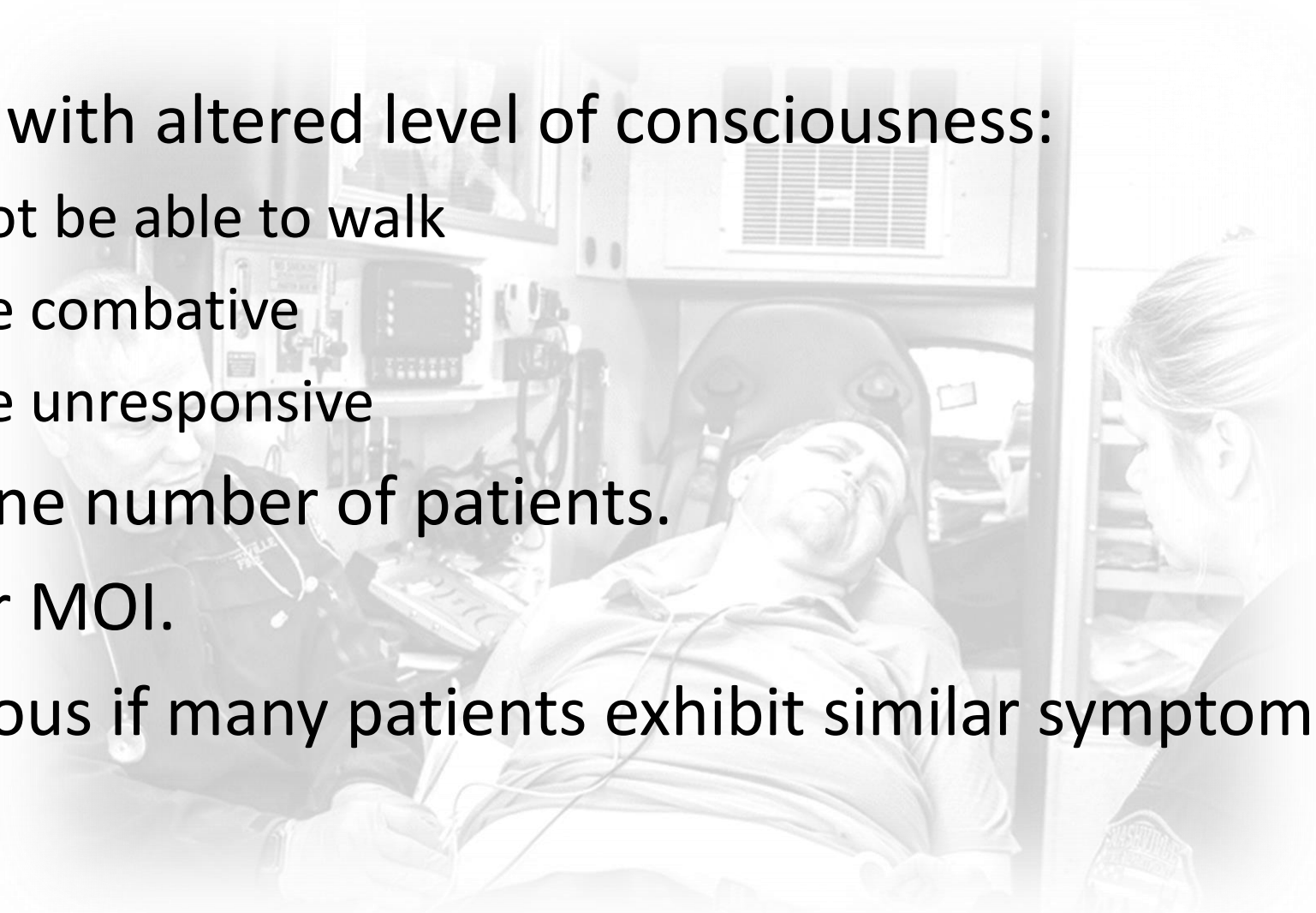


Neurology

GENERAL ASSESSMENT

- Scene assessment
- Initial assessment
- Focused history and physical examination
- Detailed physical examination
- Ongoing assessment

- Patients with altered level of consciousness:
 - May not be able to walk
 - May be combative
 - May be unresponsive
- Determine number of patients.
- Consider MOI.
- Be cautious if many patients exhibit similar symptoms.



- Abnormal postures may indicate brain damage:
 - Decorticate (arms curled toward chest)
 - Decerebrate (arms extended outward, lower arms rotated palms-down/wrists flexed)
- Airway
 - Various nerves are responsible for airway control
- Breathing
 - The greater the deviation from normal, the more severely the nervous system is affected.
- Circulation
 - Absence of peripheral pulse with central pulse = shock
 - Cushing's reflex
- Transport decision

- Perform on any patient who:
 - Has an abnormal initial assessment
 - Has a significant MOI/history of present illness
 - You suspect has a major problem



- Follow the same process as with any other patient.
- Appropriate tests to rule out causes of weakness:
 - Serial vital signs
 - Blood glucose levels
 - 12-lead ECG
 - Lung sounds
 - Tetmperature

- General: posturing, level of consciousness, Glasgow coma scale (GCS)
- Head, pupils, visual findings
- Speech and language
- Movement of the body
- Sensation
- Blood glucose level
- Chest, abdomen, pelvis, extremities

- Head
 - Area where you will spend the most time
 - Assess DCAP-BTLS
 - Level of consciousness
- Visual findings
 - Ptosis
 - Cranial nerves

- Speech
 - Quality of speech, words
 - Knowledge deficits
 - Receptive versus expressive versus global aphasia
- Pupils
 - Shape
 - Anisocoria
 - Nystagmus

- Movement of the body
 - Hemiparesis
 - Hemiplegia
 - Decussation
 - Cerebellum function
 - Ataxia
 - Bradykinesia
 - Myoclonus
 - Dystonia
 - Tremors: rest versus intention versus postural
 - Seizures

- Sensation
 - Altered ability to feel pain, temperature, pressure, light touch
 - Paraesthesia versus anaesthesia
- Blood glucose level
 - Below 4 or above 7 mmol/L
- Chest
 - Paradoxical movement
 - 12-lead ECG
 - Adventitious sounds
- Abdomen
 - Nausea/vomiting

- Pelvis
 - Incontinence
- Extremities
 - Edema
 - Venipuncture marks
- Ongoing assessment
 - Casual conversation to monitor brain functions

Table 31-3 Glasgow Coma Scale

| | Adult | Child | Infant |
|-------------|---|---|---|
| Eye opening | Open spontaneously: 4 Open to verbal command: 3 Open to painful stimuli: 2 No response: 1 | Open spontaneously: 4 Open to speech: 3 Open to painful stimuli: 2 No response: 1 | Open spontaneously: 4 Open to speech or sound: 3 Open to painful stimuli: 2 No response: 1 |
| Verbal | Oriented conversation: 5 Disoriented conversation: 4 Nonsensical speech: 3 Unintelligible sounds: 2 No response: 1 | Oriented conversation: 5 Confused conversation: 4 Cries, inappropriate words: 3 Moans; incomprehensible words/ sounds: 2 No response: 1 | Coos, babbles: 5 Irritable cry: 4 Cries to pain: 3 Moans to pain: 2 No response: 1 |
| Motor | Follows commands: 6 Localizes pain: 5 Withdraws from pain: 4 Abnormal flexion (decorticate): 3 Abnormal extension (decerebrate): 2 No response: 1 | Obeys verbal commands: 6 Localizes pain: 5 Withdraws from pain: 4 Abnormal flexion (decorticate): 3 Abnormal extension (decerebrate): 2 No response (flaccid): 1 | Normal spontaneous movement: 6 Localizes pain: 5 Withdraws from pain: 4 Abnormal flexion (decorticate): 3 Abnormal extensions (decerebrate): 2 No response (flaccid): 1 |

Scores:
 15: Indicates no neurologic disabilities
 13–14: Mild dysfunction
 9–12: Moderate to severe dysfunction
 8 or less: Severe dysfunction (Note: the lowest possible score is 3.)

Neurology

GENERAL MANAGEMENT

- Ensure scene safety and utilize routine precautions.
- Secure airway and provide ventilatory support.
- Establish IV access and administer normal saline or lactated Ringer solution.
- Continuously monitor the patient on an ECG.

- Check the blood glucose level.
- Look for the hallmarks of increased ICP and impending herniation.
- A patient with increased ICP may be bradycardic.
 - Atropine and pacing are not indicated.
- Check for drug use and watch for seizures.
- Evaluate the patient's temperature.
- Provide emotional support for the patient and family.

| Table 31-5 | | Hallmarks of Increased ICP | |
|--|---|---|--|
| Cushing reflex | | Other Signs | |
| <ul style="list-style-type: none">■ Bradycardia■ Bradypnea■ Widened pulse pressure (systolic hypertension) | <ul style="list-style-type: none">■ Decorticate posturing■ Decerebrate posturing■ Unresponsive and dilated pupils or anisocoria | <ul style="list-style-type: none">■ Biot respirations■ Apneustic respirations■ Cheyne-Stokes respirations | |

- Airway management
- Administration of naloxone
 - Treatment of unresponsive patient or those with suspected opioid overdose
- Temperature assessment