**Topic: CRITICALLY ILL AND UNCONSCIOUS PATIENT**

By the end of the topic you should be able to:

1. Define unconsciousness
2. Define a critically ill patient
3. State the levels of unconsciousness
4. Outline the categories of unconsciousness
5. Discuss the assessment of consciousness to include:
* Glasgow coma scale
* AVPU scale
1. Explain the management of critically ill and unconscious patients.

**Critically ill patient**

Key features of the critically ill patient are :

* severe respiratory,
* cardiovascular or
* neurological derangement, often in combination, reflected in abnormal physiological observations

The Airway, Breathing, Circulation, Disability, Exposure (ABCDE) approach is used by physician to assess and treat the patient.

**The aim of the initial treatment** is:

* to keep the patient alive, and
* Achieve some clinical improvement.

This will buy time for further treatment and making a diagnosis. In some settings, patients will have an impaired level of consciousness as a consequence of sedation. Thus, the assessment of consciousness level and necessity to escalate care should be considered in the time‐limited context of the appropriateness of the consciousness level in relation to recent sedation. Further management is directed by the dominant clinical problem or working diagnosis

**The Unconscious Client**

**The Consciousness**

A state of wakefulness and awareness of self and the environment

**Wakefulness**-depends on the integrity of the cerebral hemisphere and the ascending reticular activating system (RAS) in the brain.

**Awareness**-of one’s own existence, sensations, thoughts, surroundings….

Capable of responding rationally to stimuli.

Protective reflexes are on alert

**The Human Brain**

Requires a constant supply of oxygen and glucose for normal function

Interruption of this supply will cause loss of consciousness within a few seconds and may also cause permanent brain damage.

**Unconsciousness**

A state of unarousable responsiveness where the client is unaware of the self or the surroundings and no purposeful response can be obtained to external stimuli.

May be:

Brief –lasting for few seconds to an hour

Sustained-lasting for a few hours or longer

**COMA**

A state of sustained unconsciousness in which the client does not respond to verbal stimuli, does not move voluntarily, does not blink, may have altered respiratory pattern, altered pupillary response to light and varying response to painful stimuli.

**Levels of unconsciousness**

|  |  |  |
| --- | --- | --- |
| **Sno** | **Levels** | **Clinical features** |
| 1 | Consciousness | Normal, alert, oriented to self, place and timeOpen eyes spontaneously, respond to stimuli appropriately |
| 2 | Confused | Impaired or slowed thinking; disoriented |
| 3 | Delirious | Disoriented, restless, attention deficit, possible incidence of hallucinations and delusions |
| 4 | Somnolent | Excessive drowsiness; responds to verbal stimuli although slow and inappropriate |
| 5 | Obtunded | Decreased alertness slowed motor responses, sleepiness. |
| 6 | Stuporous | Sleep like state, can be aroused only by vigorous and repeated noxious stimuli; little or no activity; responsiveness only to pain |
| 7 | Comatose  | Unarousable and unresponsive, no gag reflex or pupillary response |

**Etiology/causes**

* Blood oxygenation problems
* Blood circulation problems
* Metabolic problems (Diabetes Mellitus, Over dosage)
* Central Nervous System problems (head injury, stroke, tumors, epilepsy)

**Focal Brain Dysfunction-etiology (Causes)**

* Brain tumor
* Vascular events (CVA)
* Demyelination
* Infection (brain abscess)
* Focal head injury

**Diffuse brain dysfunction**

* Infection-meningitis, encephalitis
* Epilepsy
* Hypoxia and hypercapnia
* Drug poisoning and overdoses (including alcohol)
* Metabolic/endocrine causes-diabetic coma, hepatic or renal failure, hypothyroidism, severe electrolyte disturbances.
* Hypotension or hypotensive crisis
* Diffuse head injury
* Sub-arachnoid hemorrhage
* Hypothermia, hyperthermia

**Assessment of unconscious client**

* Need for frequent systemic and objective assessments….
* For effective care
* Client is unable to report any problem
* Perform neurologic assessment for 15 minutes
* Gather history on:…..
* Present history
* Past illness/surgeries-allergies, medication, illnesses (epilepsy, diabetes), last meal, event (what happened?)
* Personal history
* Nutritional history
* Socio-economic and environmental status

**Physical assessment**

**Signs and symptoms**

* Levels of consciousness-varied
* Some are more serious than others
* Levels include unconscious episodes that are:
1. **Brief**-fainting or blacking out
2. **Longer**-victim is incoherent when roused
3. **Prolonged** –victim is motionless and not at all aware of his surroundings for a very long time.

**Patterns of respiration**

1. Hyperventilation
2. Hypoventilation
3. Cheyne-stoke respiration
4. Ataxic respiration (completely irregular breathing)

**Eyes responses**

**Types of eye movements**

1. **Saccades**-a simultaneous movement of both eyes between two or more phases of fixation in same direction
2. **Smooth pursuit movements**-the eyes move smoothly instead of in jumps
3. **Vergence movements**-two eyes moving in opposite direction
4. **Vestibule-ocular movements**-stabilizes the eye relative to the external world

**Facial symmetry**

Normally symmetric

Asymmetry-sagging or decrease in wrinkles in paralysis

**Swallowing reflex**

Drooling versus spontaneous swallowing

(10th to 12th cranial nerves)-meningitis, deep coma

**Neck**

Stiff neck e.g. in Meningitis

Absence of spontaneous neck movement e.g. in fracture or dislocation of cervical spine.

**Motor responses**

Elicited by applying peripheral noxious stimuli e.g. pinching of limbs/rubbing the sternum to elicit pain

* **Appropriate response**-brushing away the source of the stimulus
* **Inappropriate response**-decerebrate or decorticate rigidity
* Motor response is also of localizing value
* Paralyzed limb will show no response
* **Decerebrate rigidity** –indicate brain stem damage
* Complete flaccidity with no response to noxious stimuli-severe CNS depression due to drug overdose.

**Reflexes**

1. **Superficial and cutaneous reflexes**( abnominal , plantar, corneal, pharyngeal, cremasteric and anal) – absent in pyramidal tract disorders

-biceps, triceps, ankle and knee jerks

1. **Pathological reflexes** e.g Babinski (big toe bends up and back to the top of the foot and the other toe fans out)

**Note**

**Planter reflex**-flexion of great toe

**Corneal reflex** –blink reflex-an involuntary blinking of the eyelids elicited by stimulation of the cornea

Pharyngeal reflex-gag reflex-reflex during contraction of the back of the throat, evoked by touching the roof of the mouth

**Cremasteric reflex**-is a superficial reflex found in human males that is elicited when the inner part of the thigh is stroked. Stroking of the skin causes the cremasteric muscle to contract and pull up the ipsilateral testicle toward the inguinal canal

**Investigations**

Blood-CBC, biochemistry, electrolyte, sugar, urea, ammonia, PT, Creatinine, ABG, drug levels

Lumbar puncture-shows infection or bleeding

EEG-in suspected epilepsy

MRI

PET-Positron Emission Tomography Scan- it uses a special dye containing radioactive tracers. Certain organs and tissues then absorb the tracers. This scan reveals metabolic changes in an organ or tissue earlier at cellular level

**Nursing Diagnoses of the unconscious clients and managements**

1. Ineffective airway clearance R/T upper airway obstruction by tongue and soft tissue and secretions

**Management**

* Positioning –lateral
* Insert oral airway – if tongue is paralyzed
* Assess the respiratory rate, pattern, lung sounds, obstruction of the airway by tongue/ vomitus
* Suction airway intermittently
* Administer humidified oxygen before and after suctioning
* Initiate chest physiotherapy and postural drainage (unless contraindicated)
* Connect mechanical ventilators if needed
* Increase fluid intake at least 2.5 liters per day
* Auscultate chest 6 to 8 hourly
* Monitor ABGs
* Respiratory system-hypostatic pneumonia/aspiration pneumonia
* Watch out for tachypnea, intercostal retraction, fever, noisy breathing, restlessness
* Suction airway when necessary
* Change position 2 hourly
* Chest physiotherapy and postural drainage
* Precautions while feeding
* Ensure proper placement of patient before starting
* Ensure no excess residual feed before initiating feeding
* Feed client in head elevated position
* Watch out for regurgitation/vomiting
* Always keep head turned to one side
* Give fluids compatible with output
1. Ineffective cerebral perfusion R/T increased ICP

**Management**

* Maintain a patent airway
* Maintain head elevation at 30\*
* Maintain proper alignment of head and neck
* Suction airway prn
* Administer low flow oxygen therapy
* Maintain ABG values
* Maintain PaCO2 values at 35-45mmHg through hyperventi;ation
* Administer osmotic diuretics (Mannitol as advised)
* Administer stool softeners as advised
1. Risk for injury R/T unconscious state

**Management**

* Assess risk factors
* Lack of side rails
* Seizures
* Loss of corneal reflex
* Invasive lines and equipment
* Restraints
* Tight dressings
* Environmental irritants
* Damp bedding or dressings
* Nails not cut
* Keep bed in lowest position and side rails up with padding
* Observe seizure precautions
* Administer prescribed anti-seizure drugs
* Keep client’s nails cut short
* Move client with caution and follow right principle
* Protect from external sources of heat
* Avoid restraints as far as possible
* Release restraints (if used) for at least 2 hours
* Keep bed free of moisture, dust, debris
* Avoid over sedation
* Avoid speaking negatively about the client or his condition
1. Risk for fluid volume deficit R/T inability to ingest fluids, dehydration from osmotic diuretics

**Management**

* Administer fluids as advised
* Avoid over hydration and under hydration
* Assess hydration status
* Tissue turgor
* Mucus membranes
* Corticosteroids and diuretics in suspected cerebral edema as advised
* Monitor input/output and urine specific gravity
* Evaluate peripheral pulses and blood pressure
1. Ineffective thermoregulation R/T damage to the hypothalamic center

**Management**

* Monitor temperature frequently or continuously
* Look for sites of infection
* Respiratory system
* Ear, Nose and Throat
* Intravenous (IV) sites
* Wound
* Control persistent temperature elevation by use of:
* Well ventilated room
* Adequate fluid intake
* Tepid sponge
* Cold compress
* Cooling blanket
* antipyretics
* Cool shivering in fever with use of:
* Blankets
* Warm environment
* Heat application
* Avoid rapid cooling
1. Risk for impaired tissue integrity (cornea) R/T absence of normal blinking reflex, dryness of eyes

**Management**

* Protect eyes with an eye shield
* Avoid rubbing of client’s eye with bed linen
* Inspect the eye with a flash light for:
* Corneal drying
* Irritation
* Ulceration
* Check corneal blink response
* Remove contact lenses if worn
* Irrigate eyes with sterile saline or solution as advised
* Instill artificial tears (Methyl cellulose) as advised
* Apply eye patches when indicated
* Prepare for temporary tarsorrhaphy (suturing of eyelids in closed position)
1. Risk for infection due to poor body defenses

**Management**

* Regular TPR checking and recording
* Regular skin care
* Regular catheter care
* Care of infusion sites
* Restrict visitors
* Discourage flowers in the unit
* Keep unit clean
* Report any signs of infection
* Periodic lab testing of blood and urine
* Avoid exposure to persons having infection of the respiratory tract
1. Altered oral mucosa R/T mouth breathing, absence of pharyngeal reflex and inability to ingest fluids

**Management**

* Inspect oral cavity 8 hourly, remove dentures if present before inspection
* Look for dryness, cracks, encrustation, inflammation
* Give oral care every 2-4 hours
* Avoid lemon or alcohol containing agents for cleaning
* Apply a thin coat of emollient cream on lip after oral care
* Move the Endotracheal (ET) tube to the opposite side of the mouth if present
* Keep nostril free of crust
1. Imbalanced nutrition less than body requirements R/T inability to eat and swallow

**Management**

* Give fluid diet with NGT-juice, shake, milk, thin porridge.
* Administer Intravenous fluid as advised. Carefully monitor input/output
* Initiate Total Parenteral Nutrition (TPN) –if the NGT feed is not tolerated due to excessive vomiting, regurgitation, decreased peristalsis, absent bowel movement
* Assess weight, general appearance and other signs of malnutrition at frequent intervals
1. Self-care deficit-bathing, feeding, grooming, toileting) owing to unconscious state

**Management**

* Assess self-care needs
* Daily bed baths and change clothes as required
* Oral hygiene 4 hourly
* Perineal care 12 hourly
* Hair wash twice a week or as needed
* Cut nails short
* Care of urinary bladder-by use of absorbent pads/condom drainage/intermittent catheterization as indicated
* Watch out for signs of Urinary Tract Infections (UTIs)
* Increased body temperature
* Cloudy urine
* Hematuria
* Bad odor
1. Risk for complication due to prolonged recumbence (immobility)

**Management**

1. **Integumentary system-pressure sores, Perineal excoriation**
* Examine skin for redness on pressure prone areas
* Keep skin dry and soft, free of pressure
* Use of air cushion, air/water mattress, pillows, foam pads.
* Change of position 2 hourly
* Care of pressure points 4 hourly
* Avoid vigorous massage over bonny prominence
* Avoid dragging/pulling in bed
* High calorie and high protein, vitamin rich diet
* Plenty of fluids
* Gentle perineal care after bowel evacuation
1. **Musculoskeletal system-contractures and joint deformity, muscle wasting, foot drop**
* Examine for stiff joints
* Maintain anatomical position with comfort devices (foot rest, sand bags, water filled gloves, rolled cloth, trochanter rolls)
* Protein rich diet
* Range of motion (ROM) exercises 4 hourly
* Use of foot board
1. **Circulatory system-Deep Venous Thrombosis (DVT)**
* Monitor for signs of deep venous thrombosis (DVT)
* Compare the circumference of both legs
* Look for horman’s sign
* Look for redness, swelling and increased temperature of legs
* Intermittent elevation of legs above heart level for 20 minutes
* Passive ROM exercises 4 hourly
* Anti-emboli (elastic) stockings
* anticoagulants
1. **Gastrointestinal system-Stress ulcer (of stomach), constipation, fecal impaction, diarrhea, Perineal excoriation**
* Regular right feeds, antacids, H2 receptor antagonists as advised
* Watch out for regular bowel evacuation
* Adequate fluids as required
* Stool softeners and enema as indicated
* Change of positions 2 hourly
* Cotton padding under lower back
* Gentle perineal care
* Observe perineum for redness or skin breakdown
1. **Genitourinary system-Urinary Tract Infection (UTI)**
* Assisted drainage-condom/catheterization
* Catheter care
* Plenty of fluid
* Strict intake/output chart
* Report low urinary output
* Watch out for signs of urinary infection
1. **Sensory overload and overload**
* Maintain therapeutic levels of noise 30 decibels or less (whisper). Do not shout/ talk loud, have soft music at low volume
* Have rubber door stoppers and door frames
* Do not pull/drag furniture and other equipments
* Talk soothingly with the client
* Orient to the happening around-person, place, time
* Read a favorite book
* Encourage loved ones to visit and spend time with the client
* Play recorded message of loved ones
* Handle gently-touching, turning, cleaning, changing dresses, feeding etc.

**Nursing considerations**

1. Always assume that the patient can hear, even though he makes no response
2. Always address the patient by name and tell him what you are going to do
3. Refrain from any conversation about the patient’s condition while in the patient’s presence
4. Interrupted family process R/T chronic illness of the client

**Management**

* Assess family response toward client’s illness
* Anxiety, denial, anger, remorse, grief, reconciliation
* Use of coping mechanisms
* Role of client in the family
* Communication patterns and also between family members
* Social support available
* Financial status
* Develop a trusting and supportive relationship with family and significant others
* Provide information and frequent updates on client’s condition and progress
* Involve family in routine care and teach procedures
* Demonstrate and teach methods of sensory stimulation
* Use of physical touch and reassuring voice
* Talk in a meaningful way despite no response from client
* Orient periodically to person, place and time
* Recognizing and reporting unusual restlessness of client
* Enlist help of social worker, home health agency or other resources
* Assist with financial concerns, need for medical equipment and other care issues