CRITICALLY ILL PATIENT

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LESSON OBJECTIVES

By the end of the lesson, the learner will be able to,
1.Define terms related to critically ill patient:
-Critical
-Critical care
-Critical illness
-Coma
-Critical care nursing

2. Describe the types of critically ill patients.
3. Describe the critical care facilities
4. To identify and categorize patients into the appropriate pathophysiological state and admit to a critical pathway.
    -Trauma.
    -Sepsis.
    -Coma(unconscious patient).

CONT……

- CONT.

-Cardiac abnormalities.

-Respiratory failure.

-Burns.

-Over dosage (poisoning).

5. Describe how to asses a critically ill patient using the Glasgow coma scale (Assignment).

6. Describe the Nursing care of the critically ill patient.

- Define unconsciousness.
- Define loss of consciousness.

Cont….

- Describe causes of unconsciousness.
- Describe symptoms associated with loss of consciousness.
- Describe the complications of unconsciousness.
- Describe the nursing care of the unconscious patient using the nursing process.

DEFINITION OF TERMS

- Critical– Denoting or of the nature of crisis or having the potential to become disastrous, at appoint of crisis, or a condition where death is eminent or possible.
- Critical care- Involves taking care of patients with severe and life threatening illness. It is the specialized care of patients whose conditions require comprehensive care.
- Critical illness- This is a condition that is life threatening in nature, always associated with high mortality and morbidity rate.
- Coma - This is a state of unconsciousness in which a person ,cannot be a wakened, fails to respond normally to a painful stimuli, light or sound.

Critical care nursing-

- Nursing care of patient whose health is in danger or in crisis, so as to save their life or prevent complications.
- It is the field of Nursing whose focus is on the utmost care of the critically ill or unstable patient.

Critical care Nurses.

These are comprehensively trained community health nurses who have specialized to meet the needs of the critically ill patients who are admitted in acute rooms, emergency departments, intensive care units and operating theatres.

TYPES OF CRITICALLY ILL PATIENTS

Definition of critically ill patient

- These are patients who are at high risk for actual or potential life threatening health problems.
- The more critically ill the patient is , the more likely he or she is to be
- Highly vulnerable, unstable and complicated, thereby requiring intense and vigilant nursing care.

TYPES OF CRITICALLY ILL- PATIENTS

1.Second Degree burns of more than 25%

- They cause respiratory complication
- Hypovolemic shock
- Very severe pain.

2. Severe head injuries.

- Increased intra cranial pressure
- Injury to the brain tissue.
- Presence of intracranial, sub-dural hematomas.
- Brain edema.

Electrolyte imbalance

Diarrheal diseases (loose watery stool).

They include: Gastro- enteritis ,salmonellosis, poisoning, very severe emesis (vomiting).

4. Patients with Terminal organ failure

- Cardiac Arrest
- Respiratory failure
- Pulmonary distress.
- Renal failure.
- Liver failure.

3.Effects of disease on the breathing, circulation and electrolyte balance.

Breathing.

- Diseases includes: pneumonia, asthma, COPD(chronic obstructive pulmonary disease, pulmonary distress.

Circulation

- Circulatory shock.
- Tachycardia.
- Bradycardia.
- Congestive heart failure.
- Pulmonary embolism.

CONT....

5. Patients with endocrine-nervous system condition.

- Diabetes keto acidosis
- Thyroid crisis
- Traumatic Brain injury.
- Meningitis.

CRITICAL CARE FACILITIES

Definition

- This is a special department of a hospital or health care facility that provides intensive treatment of the critically ill-patient.

Examples of critical care facilities

1.Intensive care unit (ICU).

- This is where critically ill patients are admitted to receive critical care nursing.
- All departments in a hospital works towards the care of a critically ill patients.

CONT.....

i. e Pharmacy , Laboratory, physiotherapy, administration, wards, theare ,x-ray, supply and sterisation department.

- This is a room in which a critically ill patient is being actively treated and monitored.

2. High Dependent Unit.

- This is a department or unit where patients are admitted first from ICU Before transferring them to the general wards. It is a step down to ICU.

3. Burns Unit.

- Patients with burns more than 25% are admitted to the burns unit.
- Infection prevention is highly observed.

CONT...critical care facilities

4.Renal dialysis Unit.

- This is where patients with end stage renal disease are admitted for hemodialysis. (removal of wastes from the blood through use of a dialysis machine).

5.Neonatal intensive care Unit.

For admission of neonates with life threatening conditions i.e.

- Asphyxia neonatorum.
- Acute brain injury.
- Prematurity.
- Child with congenital heart defects.

CONT... Critical care facilities

6. Coronary intensive care unit.
7. Trauma intensive care unit.

4.Identify and categorize patients into the appropriate pathophysiological state and admit to a critical pathway:

1. Trauma.

- Includes head injury, chest wall injury, abdominal stub wound, fractures of the skull, burns of more than 25%.
- Here, look for bleeding, CSF leakage from the nose, altered breathing pattern, leakage of abdominal contents, dehydration, edema of the whole body, cyanosis.

2. Sepsis.

- Characterized by:
- Very high temp,restlessness,tachychardia, tachypnea, convulsion, Diarrhea and vomiting.

Cont....
3. Cardiac Abnormalities

- Capillary refill of more than 3 sec.
- Radial pulse more than normal.
- Cold skin.
- Hypotension.
- Wide pulse pressure.
- Body temp. less than 35 Celsius.
- Palmar pallor due to anemia.
- Venous jugular pressure higher.
- Abnormal ECG wave.

Cont...

- Enlarged heart on x-ray.
- Heart murmurs.
- Severe chest pains.
- Edema of the lower limps.
- Reduced urinary output.
- Coughing, hemoptysis, tachypnea, cardiac tamponade.

CONT...

Most common forms of poisoning include:

- Organophosphate.
- Acetylsalicylic acid,
- Paracetamol poisoning,
- Barbiturate poisoning
- Alcoholic poisoning
- Carbon monoxide poisoning

ASSES THE AIRWAY, BREATHING AND CIRCULATION OF ANY FORM OF POISONING

AIRWAY

- Check the airway for secretions, patency
- Remove secretions through suctioning.
- Open the airway through head tilt and chin lift maneuvers and jaw thrust maneuvers to open the airway and prevent falling back of the tongue.
- Prop up the patient in bed to ease breathing.
- Administer humidified oxygen by mask to prevent tissue hypoxia.
- Monitor the effectiveness of the oxygen therapy through observation of the vital signs, skin color for cyanosis.
- Insert the airway to maintain patency.

BREATHING

- Check the smell of acetone and alcohol.
- Check for the rise and fall of the chest.
- Count respirations.
- Give oxygen by mask 2-4 litres per hr.
- Monitor breathing quarter hourly.
- Listen for normal breaths sounds.

CIRCULATION

- Check capillary refill
- Check for palmar pallor.
- Check for radial pulse.
- Check for clubbing of fingers.
- Take the blood pressure.
- Take the body temperature.
- Take the carotid pulse.
- Listen for heart murmurs.
- Measure the arterial oxygen concentration by pulseoximeter.

ASSIGNMENT

Q1).Discuss the assessment of a critically ill patient using the Glasgow Coma scale (10 marks).

Outline

- Define Glasgow coma scale (2 marks).
- Describe the components of Glasgow coma scale (4 marks).
- Interpret the Glasgow coma scale (4 marks).

THE UNCONCIOUS PATIENT

By the end of the lesson, the learner will be able to :

- Define the unconscious patient.
- Define unconsciousness.
- Define loss of consciousness.
- Describe the causes of unconsciousness.
- List the symptoms associated with loss of consciousness.
- List the complications of unconscious patients.
- Describe the nursing care of unconscious patients.

DEFINITION OF TERMS

- Unconscious patient -

_This is a category of patient with severely impaired awareness of oneself and one's surrounding.

- Unconsciousness

- This is when a person is unable to respond to people and activities.

-This is often called coma or being in comatose state.

-Fainting due to a drop in the blood pressure and a decrease of the oxygen supply to the brain is a temporary loss of consciousness.

- Loss of consciousness - This may occur as a result of traumatic brain injury, brain hypoxia, severe poisoning with drugs that depress the activity of the nervous system e.g. Alcohol, other hypnotic drugs or the sedative drugs and severe fatigue.

CAUSES OF UNCONCIOUSNESS

- Head injury
- Skull fracture
- Asphyxia
- Fainting.
- Extremes of body temperature
- Cardiac arrest
- Blood loss
- Stroke
- Epilepsy
- Infantile convulsions
- Hypoglycemia/Hyperglycemia
- Drug overdose
- Hypothermia
- Poisoning substances.

MMEMONICS OF CAUSES OF UNCONCIOUSNESS

A E I O U M D M D S

- APOPLEXY
- EPILEPSY
- INJURY
- OPIUM
- UREAMIA
- MENENGITIS
- DIABETES
- MALARIA
- DRUGS

A E I O U T I P S

- ALCOHOL
- EPILEPSY
- INFECTION
- OVERDOSE
-UREAMIA
- TRAUMA
- INSULIN
- POISONING
- STROKE

SYMPTOMS ASSOCIATED WITH LOSS OF CONCIOUSNESS

- GCS less than 13
- Severe headache
- Projectile vomiting
- Papilledema
- Asymmetrical pupil
- Pupillary reaction to light slow down or negative
- Fever
- Restlessness
- Seizures
- Retention of urine and incontinence.
- Retention of mucus and sputum in the throat.
- Hypertension/hypotension.
- Tachycardia/Bradycardia.
- Local edema, pallor, Dyspnea, and cyanosis

COMPLICATIONS EXPERIENCED BY UNCONCIOUS PATIENTS

1.Aspiration Pneumonia

- This is due to aspiration of vomitus into the lungs.

Management

- Position in semi fowlers, suck secretion, give secretion drying drugs, Give prophylactic antibiotics.

2.U.T.I

- This is due to retention of urine in bladder during micturition.

Management.

- Give prophylactic antibiotics, Catheterize the patient, Do catheter care(Maintain aseptic technique when inserting a catheter, clean the catheter every morning to prevent ascending infection, Maintain input and output chart, check smell and color of urine.

Cont....3.Muscle dystrophy

- This is due to loss of muscle strength and tone due to lack of motion and exercises, reduced neuromuscular activity to many parts of the body.

Management.

- Instruct patient to perform small exercise, Inform the physiotherapist to do exercises on the daily basis.

4. D.V.T (Deep venous thrombosis)

- This is due to prolonged immobility and this brings about stasis of blood causing embolization in the Deep veins of the calf muscles, pelvic. This embolus logdes into the walls of the pulmonary artery producing symptoms such as chest pains, cough, hemoptysis, restlessness etc.
- At the site of the formation of the emboli, the area looks shiny, warm, tender and swollen due to inflammation of the vein.

Management

- Elevate the affected limp, Give prophylactic anticoagulant drugs such as Heparin.
- Instruct patient to wear graduated stockings.
- Give analgesics to relieve pain.
- Perform exercises.
- Administer i.v fluids to prevent stasis of blood, monitor vital signs 4 hourly.

Cont...Decubitus ulcers(bed sores)

- This is the breakdown of the skin due to prolonged stay in bed or poor nursing care.

Causes of Bed sores

1. Wetting of beddings by the unconscious patient
2. Prolonged stay in bed without turning.
3. Obesity.
4. Very sick patients.

Areas prone to pressure sores

- Elbow, sacrum, foot eminences, shoulders and knees.

Management of pressure areas

- Apply powder or zinc oxide to area prone to pressure sores.
- Massage the area to promote circulation.
- Do 2 hrly turning and maintain record of the turning chart.
- Straighten the linen on bed to avoid effects on the pressure areas.
- Catheterize the patient to avoid wetting the bed which causes breaking of the skin.
- Do exercises for the patient to avoid stasis of blood.

6.Contructures.

- This is the failure of the musculoskeletal system to attain normal flexion and extension due to immobility and unconsciousness and lack of exercises.
- The most affected areas of the body include upper and lower limps joints.

Management

- Involve the physiotherapist in the care of the patient.
- Do 2 hourly turning to promote circulation.

MANAGEMENT OF UNCONCIOUS PATIENT USING THE NURSING PROCESS

- NURSING ASSESMENT

PRIMARY ASSESMENT.

a).AIRWAY.

- Does the patient and breath freely?, was there a decrease in consciousness, check for abnormal breath sounds, stridor, wheezing etc., Is there use of accessory muscles of respiration? ,Restlessness, cyanosis, seizures, retention of mucus, Hoarseness and cough.

b).BREATHING

- Check for any abnormal breath sounds: stridor, wheezing
- Look for cyanosis, dyspnea, hypoxia and tachypnea.

c).CIRCULATION

- Check hypotension/hypertension, tachycardia, hypothermia, pallor, cold extremities, decreased capillary refill, decreased production of urine, pain, enlarged lymph nodes.

SECONDARY ASSESMENT

1. HISTORY TAKING

- Taking history paralysis (stroke).
- In infection of the brain that is meningitis, encephalitis.
- Diabetes mellitus blood sugar.
- Diarrhea and excessive vomiting.
- Brain tumor (meningioma).
- Poisoning organophosphate poisoning.
- Epilepsy .
- Take history of trauma that is RTA assault, surgery.

2. PHYSICAL EXAMINATION

1. Activity and rest

- Difficulty in moving
- Weakness
- Loss of sensation or paralysis
- Getting tired easily
- Painful muscle spasms
- Change in level of consciousness
- Change in muscle tone(flaccid or spastic)

(Paralysis, hemiplegia, general weakness)

Impaired vision.

2. CIRCULATION

- Take history of the paralysis(stroke)
- History of valvular heart disease.
- Dysrhythmias, heart failure, bacterial endocarditis.
- Polycythemia.
- Arterial hypertension.
- ECG changes.
- Pulsation
- Pulse rate (carotid, femoral, iliac artery, abdominal, laorta)

3. ELIMINATION

- Urinary incontinence
- Anuria
- Abdominal distension(very full bladder)
- Absence of bowels sounds(paralytic ileus)

4. FLUID AND NUTRITION

- Check for nausea
- Loss of appetite
- Loss of sensation of tongue, check throat

- Dysphagia
- History of diabetic
- Increase fat in blood
- Obesity

5. SENSION NEURAL

- Syncope
- Headache due to intra cerebral hemorrhage or sub arachnoid hemorrhage
- Weakness
- Tingling or numbness

- Reduced visibility
- Touch
- Loss of sensors on the extremities and the face
- Impaired sense of taste
- Disorder of swell
- Mental status
- Loss of consciousness.
- Behavioral disturbance (such as lethargy, apathy attack)
- Impaired cognitive function

- Extremities weakness paralysis not draw the hand grip,
- Reduced deep tendon reflexes
- Facial paralysis
- Aphasia (damage to or loss of language)
- Express possibility
- Difficulty in saying saying the words
- Difficulty saying the words comprensively
- Loss of ability to hear
- Loss of ability to see, touch, tactile stimulus

- Reaction and size of the pupil the pupil reaction to light the positive and negative, pupil size and diameter.

6. PAIN AND COMFORT

- Headache
- Unstable behavior
- Restlessness
- Muscle tension

7.RESPIRATION

- Screen for risk factors(smokers).
- Cough

- In drawing of chest
- Crust respiration

8. SOCIAL INTEGRATION

i. Problem to speak

ii. Inability to communicate

DIAGNOSTIC TESTS

1. Neuroimaging computed tomography (CT scan)

Magnetic resonance imaging (scan)

2. EEG(electro encephalogram) to check the brain waves

3. Thyroid function tests

Thyroxin hormone levels to check how the thyroxin functions

4.Artenrial blood gases co2 and o2 conc levels.

5. CSF analysis

Check for proteins, glucose, purulence etc., pressure

6. Urea and electrolytes

7. Lumbar puncture knowing the value of intra cranial pressure

8. Radiological that is skull x ray, chest x ray etc.

9.ECG(electro cardiac gram)

- To check the function of the heart, ECG of a heart in normal sinus rhythm
- This is the process of recording the electrical activity of the heart over a period of time using electrodes placed on the slain

NURSING CARE OF UNCONCIOUS PATIENT

1. Airway

- Prop up the patient in bed to ease breathing, reduce the risk of aspiration pneumonia, to reduce GERD(gastro-enteric reflux disease) semi fowlers position(45 degrees).
- Suck any obvious secretion by function tube.
- Administer oxygen by mask or nasal catheters
- The oxygen should be humidified to prevent drying of the respiratory surfaces
- Use the head tilt and chin lift maneuvers and jaw thirst to position the head and open the airway
- Put patient in recovery position to drain sections

2. Breathing

- Check for risk and fall of the chest
- Feel whether the patient is breathing
- Count the respirations slowly
- Support the patient using mechanical ventilation(endotracheal tube, with oxygen connected).
- Wear off from the ventilator slowly.
- Check for abnormal fluids.
- Wide any sections from the airway.

3. Circulation

- Insert an i.v line for fluid administration.
- Take pulse rate to monitor the fluid balance
- take blood pressure to monitor the function of the heart
- Check for the pallor of the mucus membranes and palms administer blood of the patient is pale
- Monitor the blood transfusion until it is over
- Monitor the cyanosis of the extremities which shows signs of hypoxia
- Raise the foot of the bed using blocks to help to direct blood to the vital organs such as kidneys, liver brain and the lungs.

4. Pain management

- This is a key principle of managing the unconsciousness patient
- Classify the pain
- For mild pain-core NSAIDS
- For severe pain-core OPIOD analysis (IV morphine)
- Turn the patient every 2 hours to help relieve the pain
- Assess the intensity of the patient using the rate scale (1-10) where (0-2)mild pain(3-5)moderate pain (6-years)severe pain
- Monitor vital signs temperature, pulse rate, respirations BP 4 hourly to detect deviations from normal.

5. Wound and skin care

- Do 2 hourly turning and maintain the turning charts
- Treat the pressure area (elbows, knees, shoulders, back area Pedi's tibia is dorsalis region).
- Apply to oxides ointment and powder.
- Straighten the beddings.
- Catheterize the patient to avoid wetting the bed.
- Provide diet rich in proteins and vitamins to boost the immunity of the patient.
- cut the nails and hair short to promote comfort

6.Prolonged immobility

- Prevention complications of immobility which include

i. UTI catheterize.

ii. DVT exercise, heparin, stockings.

iii. Hypo station pneumonia, physiotherapy, antibiotics, function

iv. Contractures- exercise, local range exercise.

v. Pressure treat pressure areas.

7. Nutrition support of the patient

- Asses the nutritional needs of the patient.
- Insert an NG tube for feeding.
- If patient has malnutrition, give enteral feeding and supplemental with preventer feedings.

- Give a balance diet that is water, mineral, vitamins, proteins, roughages

8. Elimination needs of the patient

- Catheterize to monitor the input and output-to monitor functioning of the kidneys
- Reduced the bowel emptying (consisting of stool, amount and color) smell

9. Ulcer prophylaxis

- Give ulcer healing drugs

That antacids= actals

-H2 receptor antagonism ranitidine

-Portion pump inhibitors oneprawle

10.Psycological support to patient and family

patient

- Explain the procedure to the patient even if they are the conscious
- Inform the patients even the time, place, and person in the ICV

To relatives

- Explain all the procedure to the relatives
- Explain the management of the symptoms
- Monitor the professional ethical by avoiding to much explores
- Privacy
- Consent
- Confidentiality

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11. Glucose control

- ✓ Keep monitoring the blood sugar.
- ✓ If it is high give insulin s/c and avoid stressful situation.
- ✓ If low manage with diet keeping watch on fasting blood sugar.
- ✓ Monitor signs of hypoglycemia/ hyperglycemia.
- ▶ Restlessness
- ▶ Coma
- ▶ Urination
- ▶ Sweating a lot high sugar level

END