

28th May
Thursday

Autoimmune Disorders

UNIT-4
GNM 2nd year
Medical surgical
Nursing - 1

Rheumatoid Arthritis

Rheumatoid arthritis is a chronic and usually progressive inflammatory disorder of unknown etiology. Its mainly effect the joints

Etiological factors

- Genetic
 - Environmental factor
 - Tumor, Necrosis.
 - Inflamed synovium.
- ↳ Trauma
injection.

Joints involve in RA

Hands and wrist

Shoulders

Elbow

feet

Knees

Hips

Cervical spine.

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Sign and symptoms of RA

- Fatigue
- Stiffness especially in early morning
- Low grade fever
- Weakness
- Muscle pain
- Rheumatoid nodules.
- Deformity of joint
- Pain.

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Diagnosis

1. Rheumatoid factor (RF)
2. ESR (Sedimentation rate).
3. CRP (C-Reactive protein)
4. CT
5. X-Ray
6. MRI

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Treatment

- To prevent and control joint damage.
- To prevent loss of function.
- To decrease pain.
- Preservation of muscle & joint function.

◦ DMARD - Disease Modifying Anti Rheumatoid drugs.
◦ NSAIDs, corticosteroid.

Non-pharmacological

- Diet
- Exercise
- Massage
- Meditation
- yoga.

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SLE Systemic Lupus Erythematosus

SLE is a chronic multisystem, inflammatory disorder. It occurs mostly in young female. Butterfly rashes on the face.

Etiology

Unknown

Genetic

Environmental - Bacteria, Virus, chemicals, drugs.

Hormonal factor

Clinical Manifestations

- Butterfly rashes on the face.
- Arthritis
- Arthralgia
- Anorexia
- Malaise
- Photosensitivity
- Maculopapular rashes.
- Alopecia.
- Joint swelling.

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Diagnostic Test

- Blood test - Anti DNA antibody testing.
- ESR, CBC
- Urine examination

Mgt

- NSAID - Aspirin
- Corticosteroid
- Immunosuppressive drugs such as Cyclophosphamide.

Nsg. Management

Use sunscreen for photosensitivity.

Relaxation therapy.

Proper nutrition

Importance of handwashing.

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Graft v/s Host disease

GVHD Occur when an immunodeficient patient is transfused with immunocompetent cells. This disease Occur when there is no close match between donor and recipient.

- GVHD disease Occur After: →
- Any blood product transfusion.
 - After kidney liver transplantation.
 - Bone marrow transplantation

Its Occur with in 100 days after transplantation

Symptoms

- Maculo papular rash appear on palm of hands & soles of feet.
- Abdominal pain
- Nausea
- Vomiting
- Diarrhea.
- Jaundice elevated liver enzymes.
- Bacterial } injections.
- Fungal }

Management

- Administered corticosteroid.
- Immunosuppressive agent (Methotrexate cyclosporine).
- Analgesic.
- Antiemetic
- Proton pump inhibitors.

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Ankylosing spondylitis

It is a chronic systemic inflammatory disease of the axial skeleton. Its mainly affect the joint in spine and sacroiliac joint in the pelvis.

Etiology

- Unknown
- Genetic factor
- Bacteria - Klebsiella pneumoniae.

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Symptoms

- Pain in sacroiliac and lower back region.
- Buttock pain.
- Lower back stiffness
- Flattening of spine.
- Cutaneous lesions.

Diagnostic Test

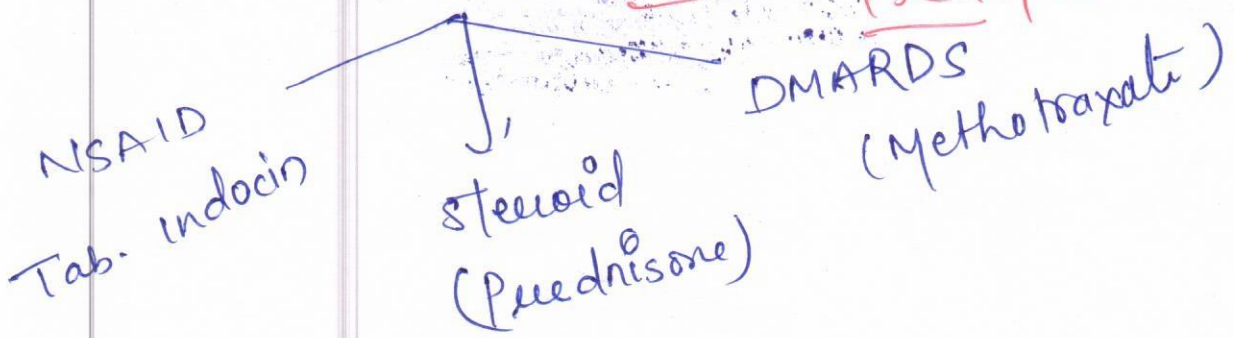
- CBC - Increased ESR
- RA factor
- X-Ray
- CT
- MRI

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Non-pharmacological Treatment

- Regular exercise - swimming, yoga.
- Hard bed.
- Posture - sit / walk straight
- Diet - Rich with calcium, avoid overweight.

Pharmacological Treatment



Physiotherapy

- Exercise
- Massage

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UNIT-5

Fluid and Electrolyte Imbalance

GNM 2nd
year
MSN-1

Dehydration → It means loss of water from extracellular fluid compartment that is present in intravascular and interstitial space which lead to hypovolemia.

Cause

- Lack of fluid intake
- Excessive loss of water and body fluid due to diarrhoea, fever, vomiting, hyperglycemia, burn, use of diuretic drug.

Clinical Manifestation

Dizziness

Fatigue

Weakness

Poor skin integrity

Weight loss

Tachycardia

Hypotension

Dry skin & mucous membrane

Collapse neck veins

Renal failure

Seizure, coma

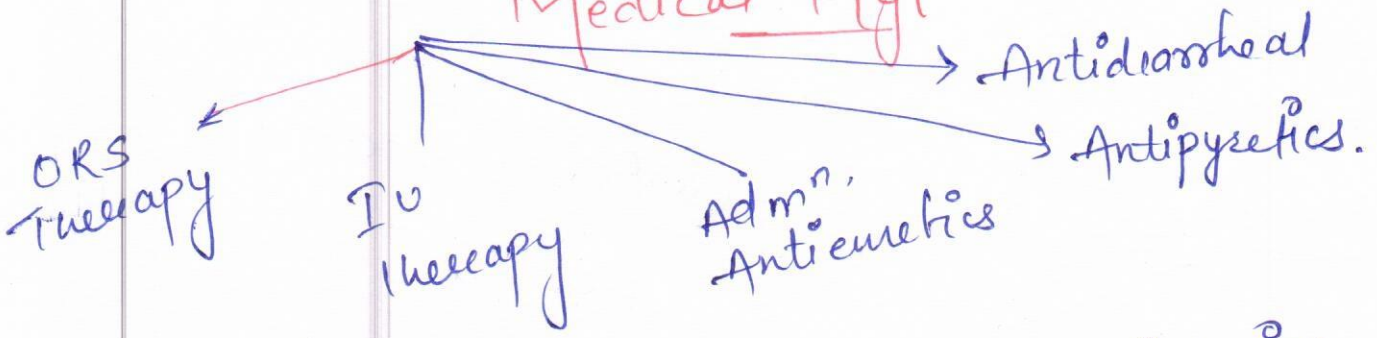
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Diagnostic Test

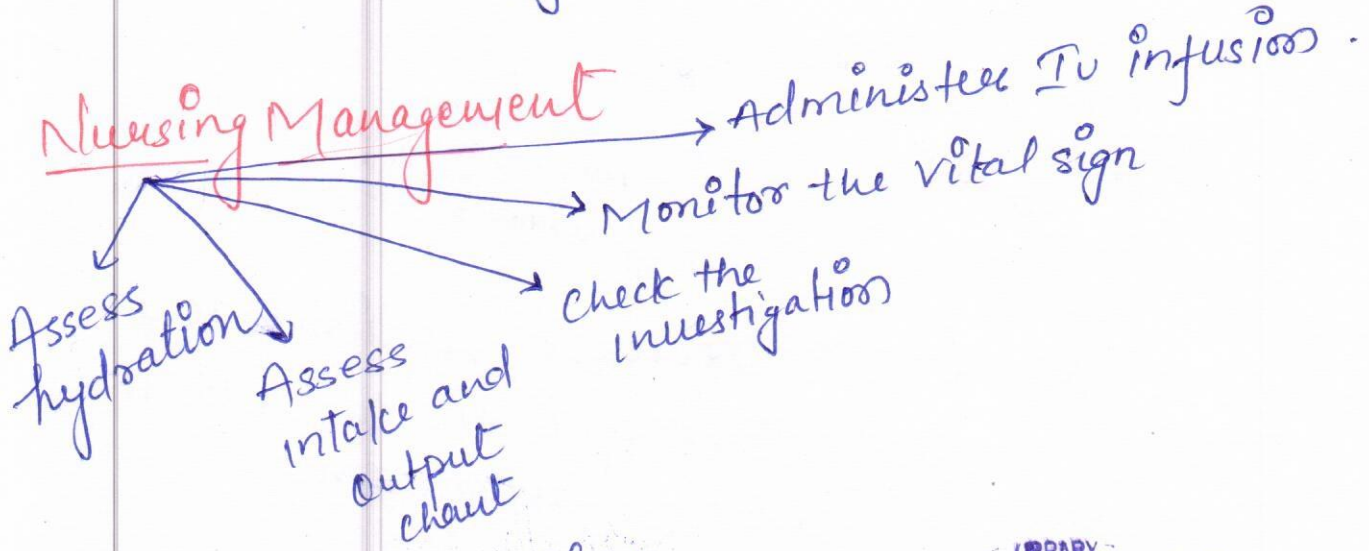
- Check serum Na. level
- Check ser. osmolality
- Check HB. level.

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Medical Mgt



Nursing Management



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- Daily check of the body.

Overhydration

Excessive intake of fluid in extracellular space i.e. interstitial space. i.e. Intra vascular

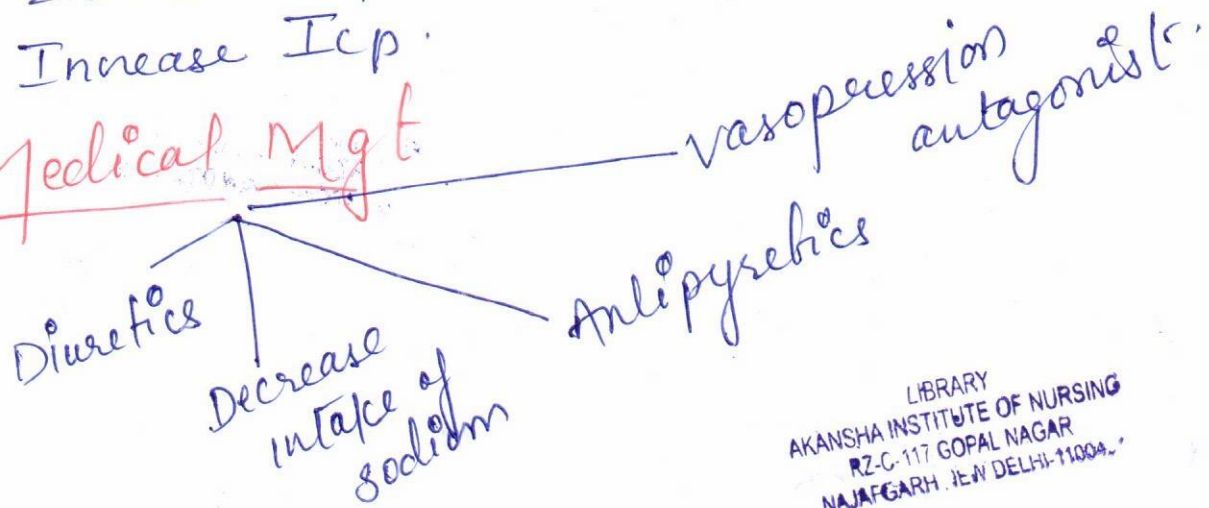
Causes

- Admⁿ. excessive fluid.
- Heart failure
- Renal disease
- Excessive intake of sodium

Clinical Manifestations

- Rapid weight gain
- Edema
- Hypertension
- Distended neck vein
- Increase CVP
- Increase ICP

Medical Mgt



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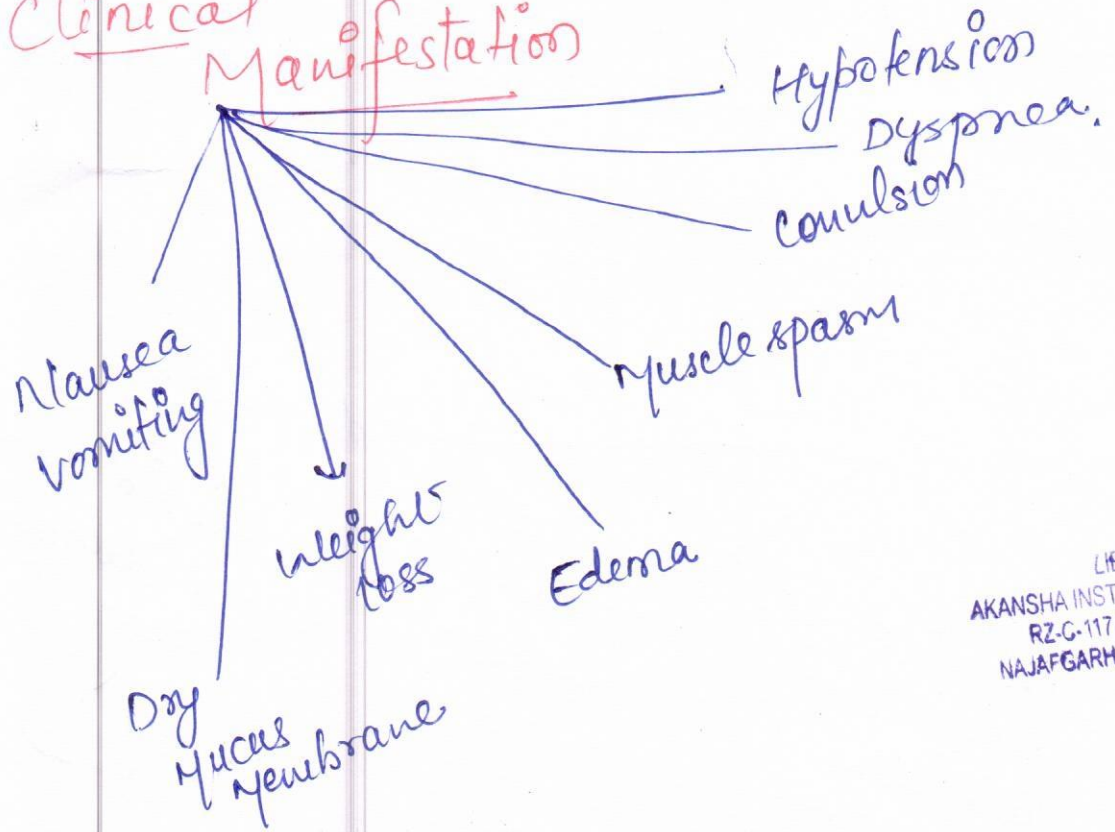
Hyponatremia :- \rightarrow Decrease sodium level below 135 meq/L in the blood stream are called hyponatremia.

Causes



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Clinical Manifestation



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Diagnostic

- History taking
- Physical Examination.
- check ser. Na level
- check urine specific gravity.

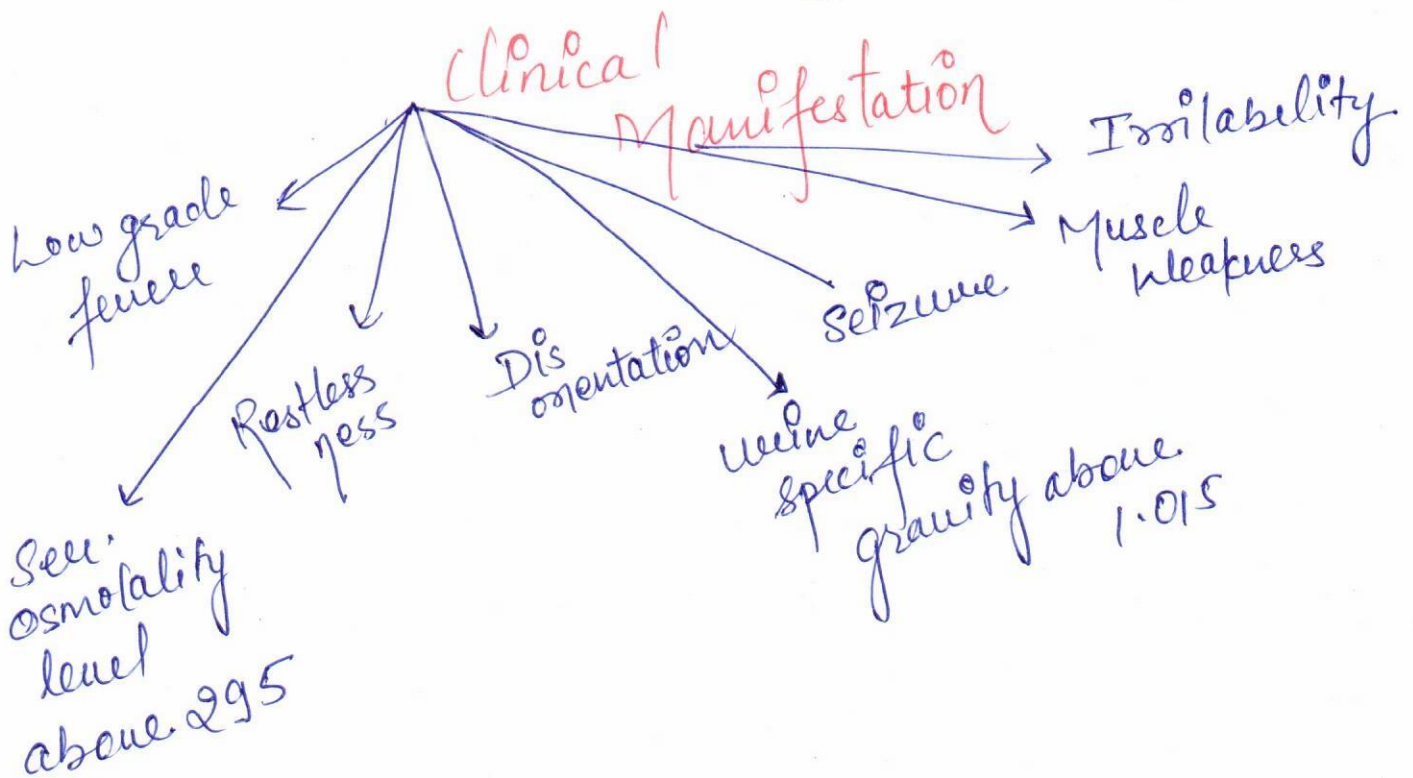
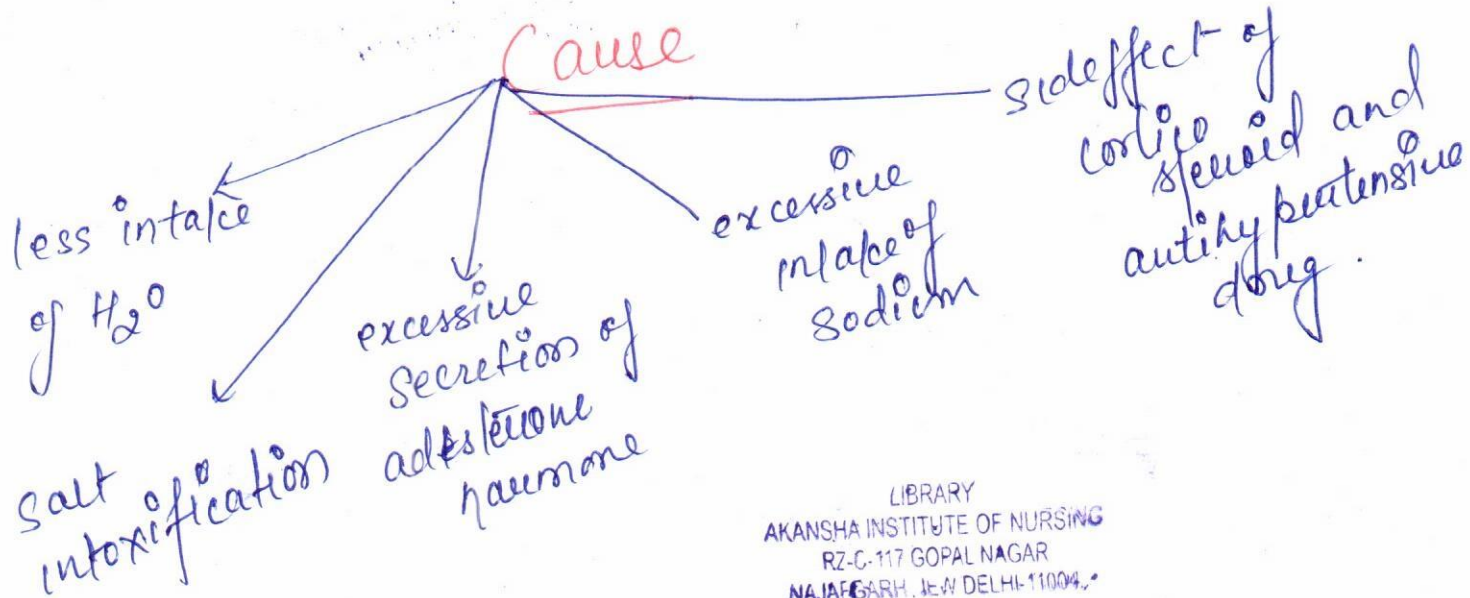
Management:

- Maintain I/O chart.
- Provide Na contain diet.
- Administer IV infusion
- check vital sign
- check Ca level.

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Hypenatremia

Increase serum sodium level more than 148 meq/L in blood stream are called hypenatremia.



o Distended neck vein.

Diagnostic Test

- History Taking
- Physical Examination
- Check sodium level
- Check osmolality level.

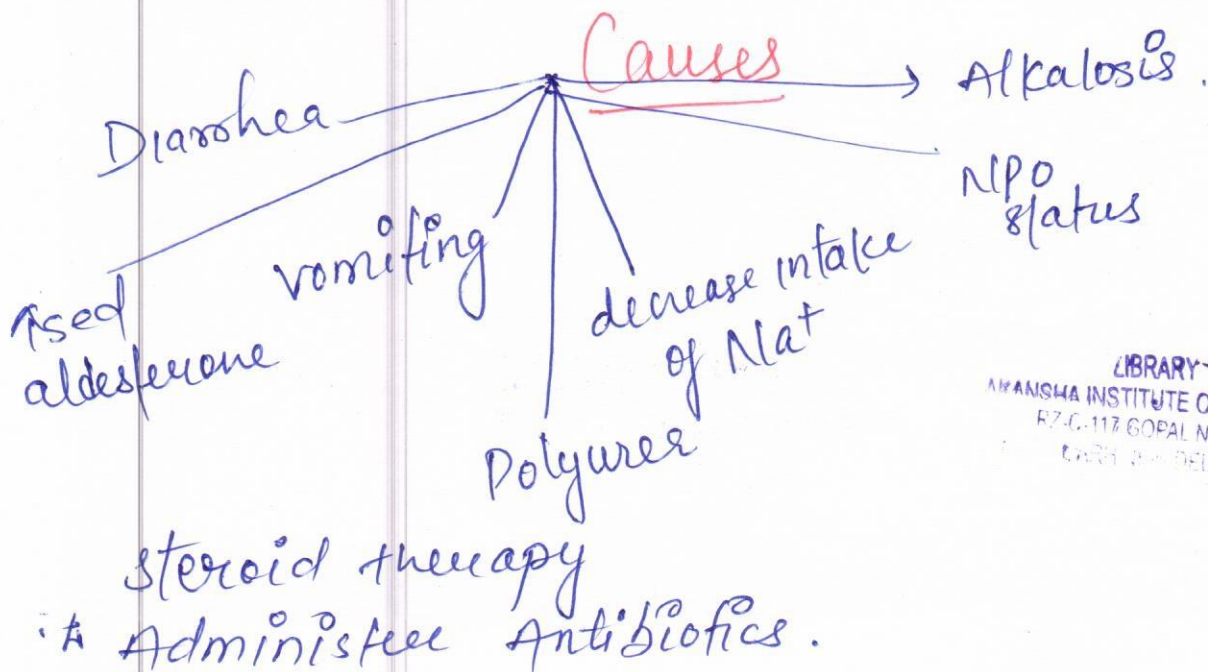
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Nursing Management

- Maintain I/O chart.
- Avoid administration of Na contain diet.
- Administer diuretic drugs.
- Check Na level.
- Avoid phosphorus contain diet.

Hypokalemia

In hypokalemia see potassium level less than 3.5 meq/L in the blood stream are called hypokalemia.



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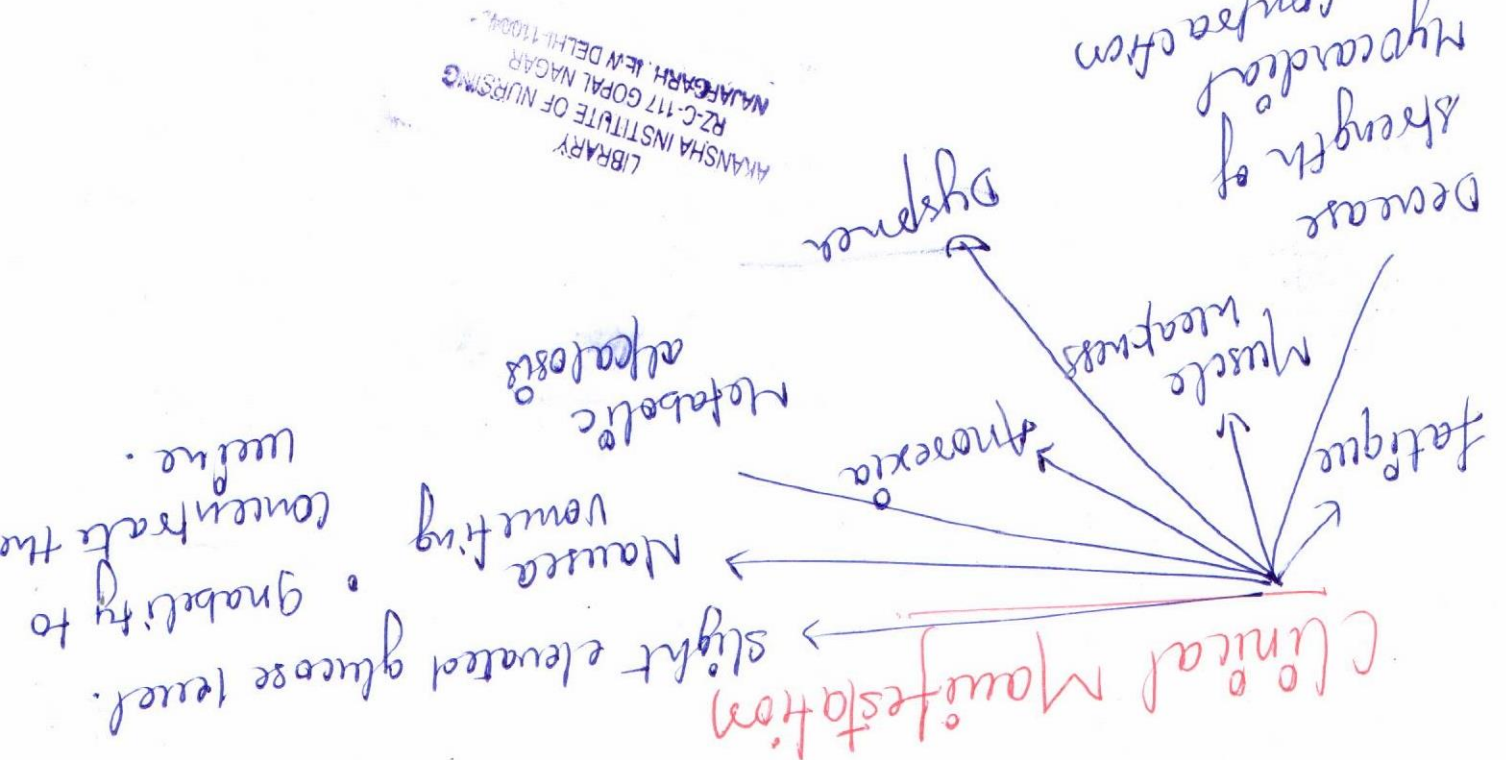
Assess sign of symptoms.
Antibiotic drugs
Monitor eeg regularly
Given 'K' rich diet
Monitor see 'K' level.
Check vital sign

Nursing Management

- given as infusion.
- KCl injection given by diluting in normal saline of 500 ml.
- gfy. KCl given direct IV it can cause cardiac arrest.
- Provide oral potassium supplement.

Medical Management

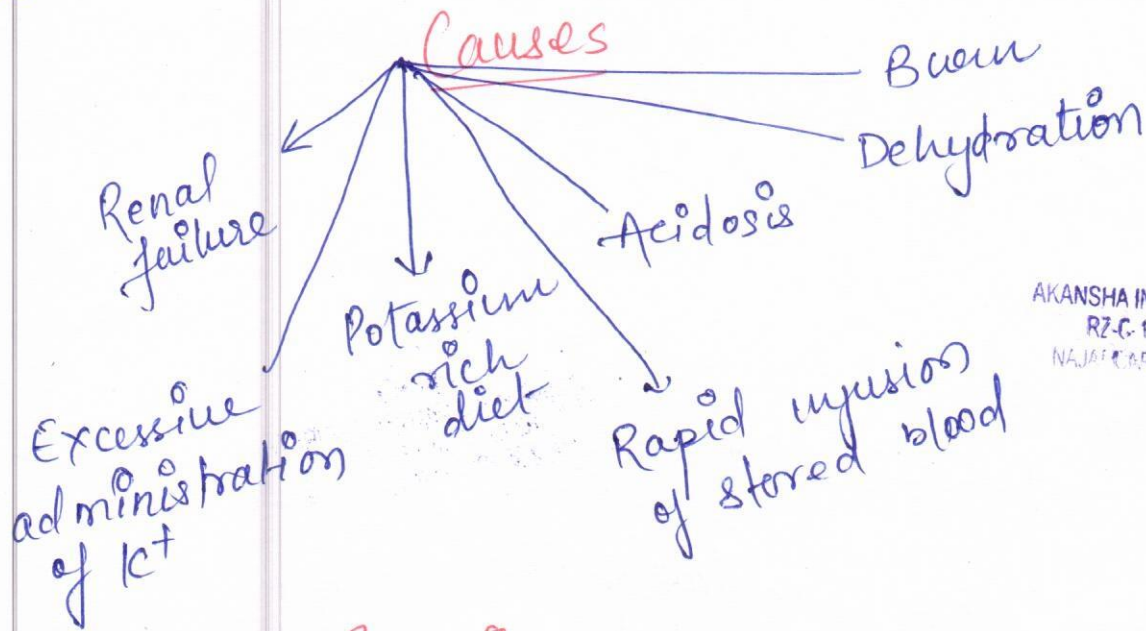
Decrease strength of myocardial contraction



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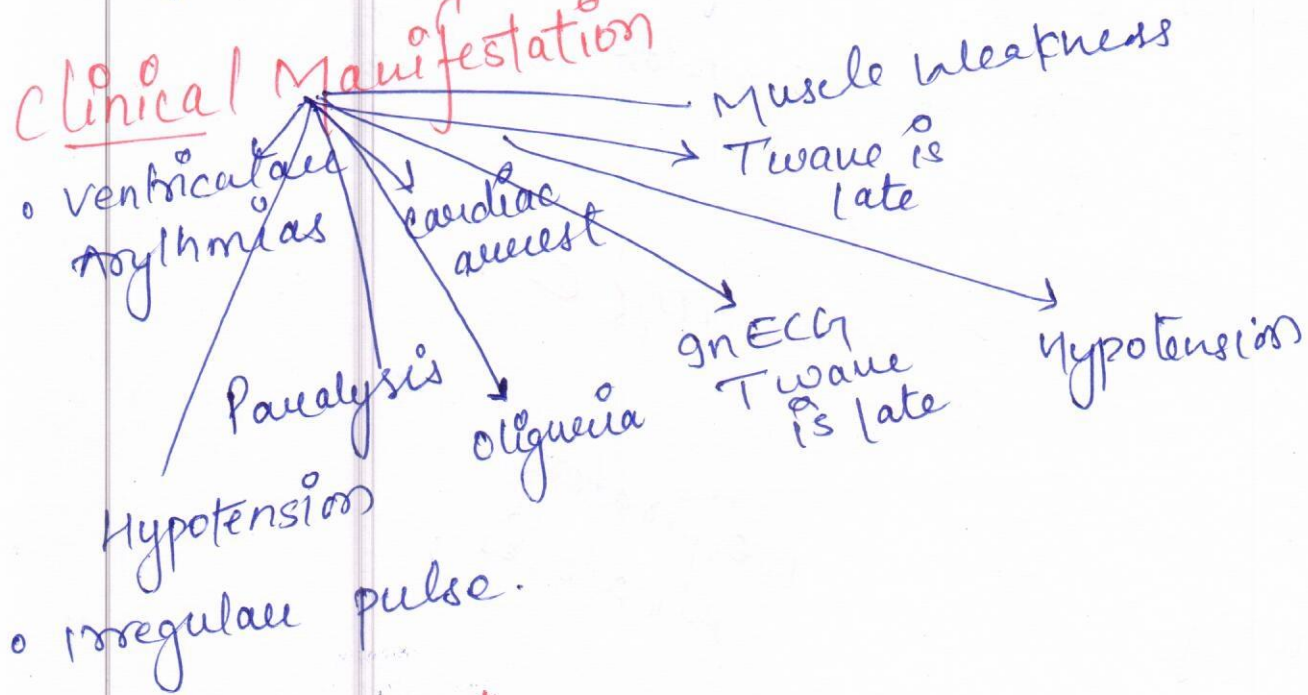
Hypokalemia

In hypokalemia increase serum potassium level more than 5.3 meq/L in blood.



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Clinical Manifestation

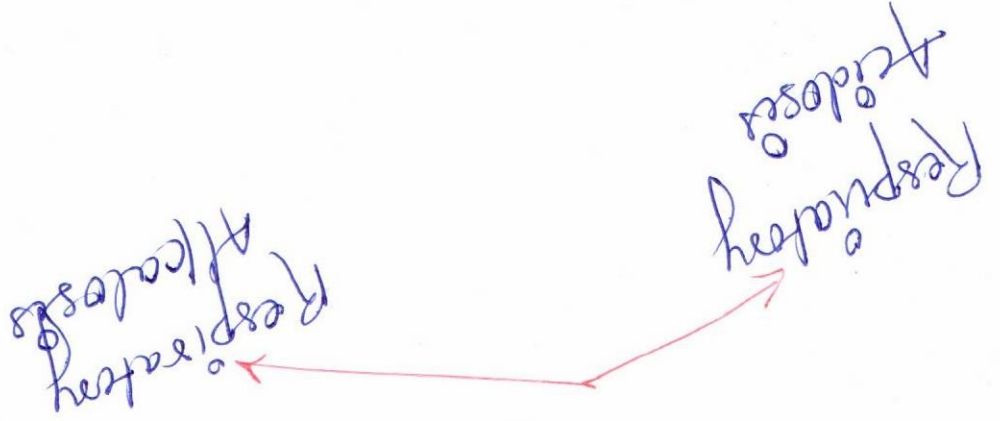


Medical Mgt

- Take Regular ECG.
- Admⁿ: HCO₃ insulin + glucose
- Avoid 'K' rich diet such as Banana, orange juice, dry fruits.

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Acid Base Imbalance

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- Assess sign and symptom
- Monitor ECG Regularly
- Monitor K^+ level
- Avoid K^+ rich diet.
- Hypotension

• check vital sign

Nursing Management

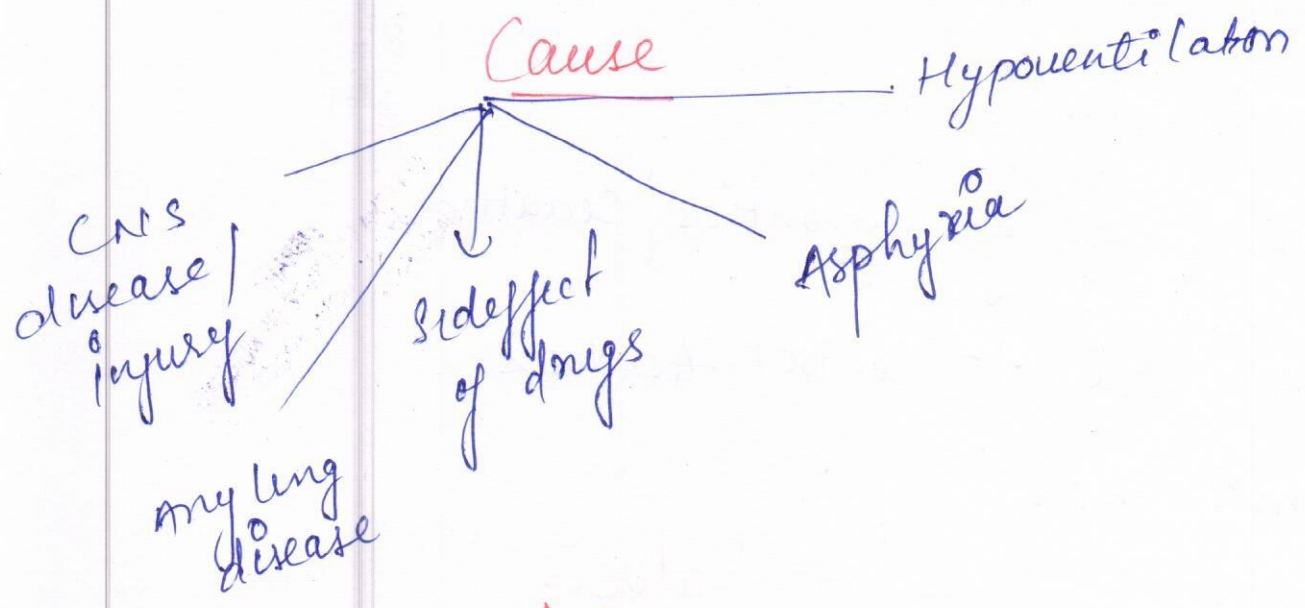
- Assess ABG for metabolic acidosis.
- Admin. insulin with glucose to make (K)
- back to the cell.

Respiratory Acidosis

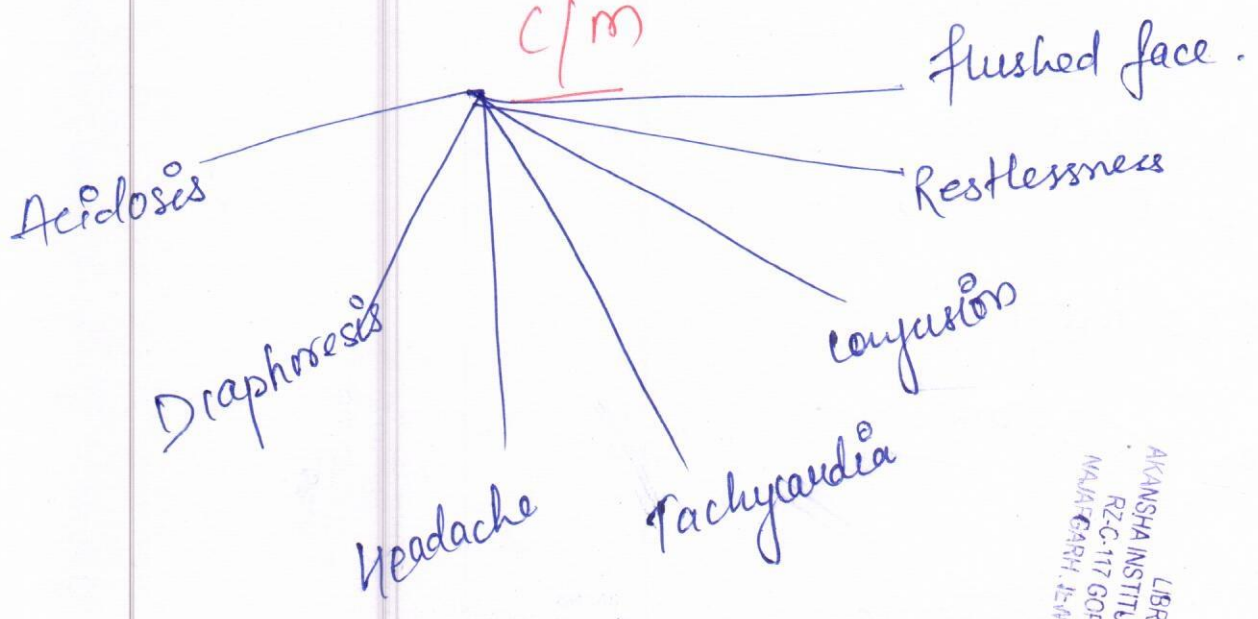
Excess CO_2 Retention
 PH < 7.35
 $HCO_3^- > 26$ meq/l
 $PaCO_2 > 45$ mm/hg

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Cause



C/M



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Delta Test
ABG

- Monitor respiratory rate, depth
- Auscultate breath sound.

• Assess level of consciousness

• Check vital sign.

- Restrict use of hypnotics / sedative.

• Adminⁿ. RL to control Acidosis

• Adminⁿ. Kcl

Resp. Alkalosis

Excess CO₂ Excretion

PH > 7.45

HCO₃ < 22 meq/l

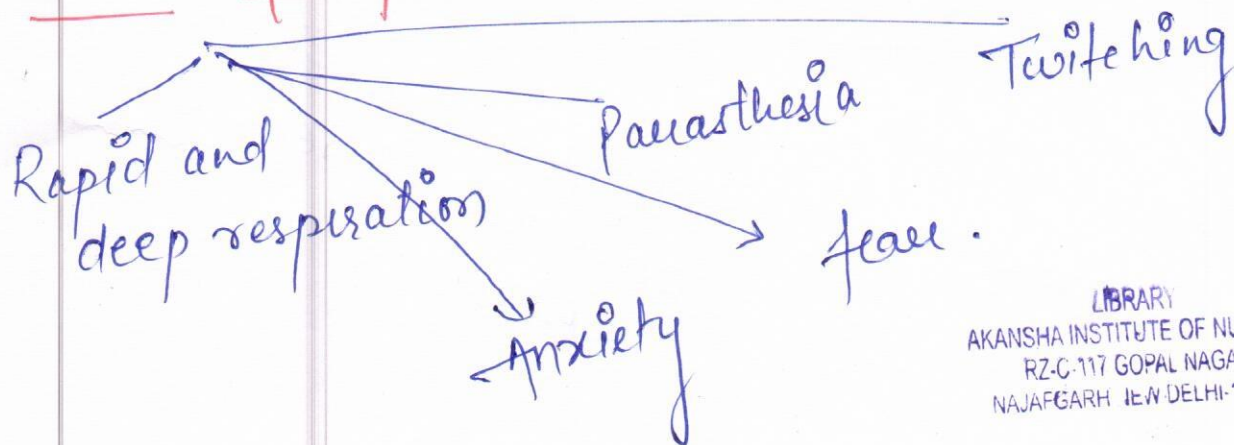
PaCO₂ < 35 mmHg.

Cause

- Gram -ve Bacteria
- Side effect of drug.
- Hyperventilation.

Clinical Manifestation

10



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Management

- Monitor respiration rate
- provide tepid sponge for reducing the fever.
- Provide safety precaution.
- Admⁿ. Sedation
- Admⁿ. CO_2 .

Metabolic Acidosis

- HCO_3^- is loss, Acid retention.

- $\text{PH} \neq 7.35$

$\text{HCO}_3^- < 22 \text{ meq/L}$

$\text{PaCO}_2 < 35 \text{ mmHg}$

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Cause

HCO₃ deplet
due to diarrhea

inadequate excretion of
acid due to renal
disease.

Clinical Manifestation

Rapid and
deep breathing

fatigue

headache
lethargy

coma.

Management

- Monitor Resp. rate, heart rate.
- Assess level of consciousness
- Maintain I/O chart
- Encourage intake of food and fluid.
- Monitor ABG.
- Adm. O₂ therapy.
- Adm. I/O fluids.

Metabolic Alkalosis

HCO_3^- is retention, acid loss

$pH > 7.45$

$HCO_3^- > 26 \text{ meq/l}$

$P_{aCO_2} > 45 \text{ mmHg}$

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Causes

Loss of HCl
due to vomiting

Loss of K^+
due to renal
excretion diuretic
ureeapay.

Excessive
alkali
injection.

C/m

shallow breathing.

Restlessness

Hypertonic Muscle.

Confusion

Apathy

Tetany

Seizure

Diagnostic Test

ABG.

Blood test-

KFT and

Other
electrolyte

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Nursing Management

- check vital sign
- Check Arterial Blood gas report.
- Monitor B.P
- Assess Gcs score in comatose patients.
- Assess blood circulation
- Monitor I/O chart.
- Monitor electrolyte
- Admⁿ. Saline solution.
- Admⁿ. Bicarbonate lactate, saline, iv to correct HCO_3^- deficit.

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