

## PULMONARY DISEASES – CASE STUDY

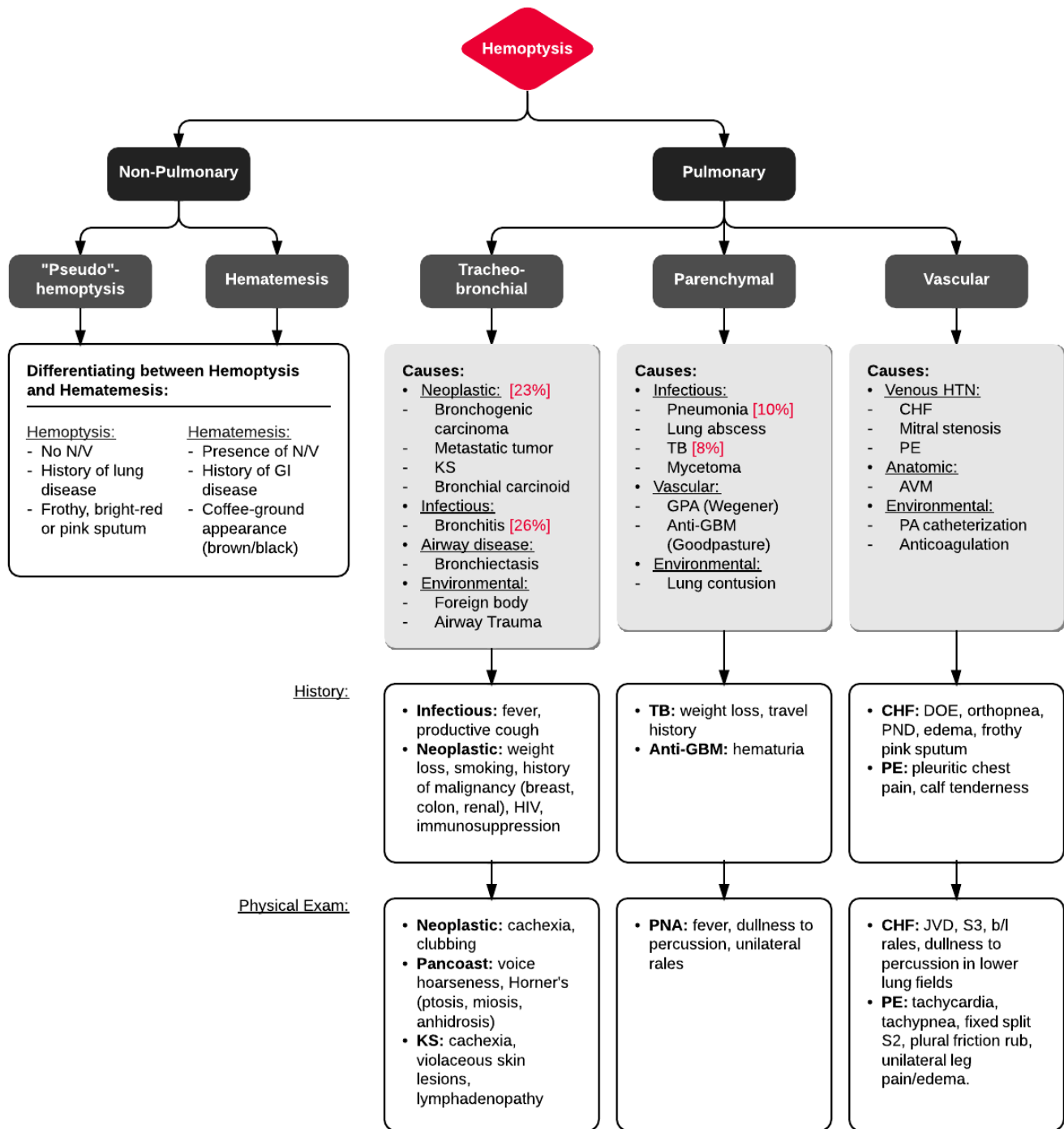
| Disease              | Interstitial Lung Fibrosis                                                                                                                                                                                                                                                                     | Tuberculosis                                                                                                                                                                                                                                                                                                                | Pneumothorax                                                                                                                                                                                                                                                                                                                             | Pneumonia                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| <b>Symptoms</b>      | <ul style="list-style-type: none"> <li>- Exertional Breathlessness</li> <li>- Dry Cough</li> <li>- Chest pain</li> <li>- Hemoptysis</li> <li>- <b>History of drugs</b> as : Methotrexate / Sulphonamides/Anti-arrythmatic (amiodarone) / Aspirin / Gold</li> </ul>                             | <ul style="list-style-type: none"> <li>- <b>Chronic Cough</b> ( may mimic whooping cough / productive and hemoptysis may be presented )</li> <li>- <b>Persistent collapse</b> followed by bronchiectasis of middle lobe ( Brok's \$ )</li> <li>- <b>Enlarged LN</b></li> <li>- Ennlarged Gohns focus</li> </ul>             | <ul style="list-style-type: none"> <li>- <b>Sharp chest pain (unilateral)</b></li> <li>- <b>Dry cough</b></li> <li>- Dyspnea</li> <li>- Shock in tension pneumothorax</li> </ul> <p>Classic presentation = Tall thin person smoking</p>                                                                                                  | <ul style="list-style-type: none"> <li>- <b>FHMA</b></li> <li>- <b>Cough starts dry then brownish rusty sputum / watery sputum</b></li> <li>- Dyspnea</li> <li>- Pleuritic stitching chest pain ( <b>pleurisy</b> )</li> </ul>                                                                                                                                                                                                     |
| <b>Signs</b>         | <ul style="list-style-type: none"> <li>- <b>Cyanosis</b></li> <li>- <b>Clubbing</b></li> <li>- <b>Bilateral basilar end inspiratory Crepitations</b></li> </ul>                                                                                                                                | <ul style="list-style-type: none"> <li>- <b>Fever especially evening</b></li> <li>- Tachycardia</li> <li>- Cachexia <b>Clubbing( SLS)</b></li> <li>- <b>Crepitations</b></li> <li>- Signs of Cavity</li> </ul>                                                                                                              | <ul style="list-style-type: none"> <li>- <b>Tachycardia</b></li> <li>- <b>Hypotension</b></li> <li>- Respiratory Distress</li> <li>- <b>Unilateral Bulge</b></li> <li>- <b>TVF decrease</b></li> <li>- <b>Trachea shifted</b></li> <li>- <b>Hyperresonance</b></li> </ul>                                                                | <ul style="list-style-type: none"> <li>- <b>Tachycardia</b></li> <li>- <b>RR to HR (1:2)</b></li> <li>- <b>Herpes labialis</b> ( in pneumococcal infection)</li> <li>- Jaundice in case of hemolysis</li> <li>- Pale or cyanotic</li> <li>- <b>TVF increase</b></li> <li>- <b>Dullness</b></li> <li>- <b>Bronchial breathing</b></li> <li>- <b>Fine late inspiratory crepitations then coarse inspiratory creptions</b></li> </ul> |
| <b>Inv.</b>          | <ul style="list-style-type: none"> <li>- <b>CXR= Bilateral Pulmonary infiltrations with reticulo-nodular shadow+ Honeycombing in severe cases</b></li> <li>- <u>High resolution CT</u></li> <li>- <b>ABG = Type-1 RF</b></li> <li>- <b>PFT= Reduced lung volume ( restrictive )</b></li> </ul> | <ul style="list-style-type: none"> <li>- <b>CXR = Persistant shadow inspite of ttt + Cavity / Miliary shadow/Hilar or paratracheal LN (signs of complications)</b></li> <li>- <u>Bacteriological examination</u> =</li> <li>- ZN-stain</li> <li>- <u>Tubercilin test</u></li> <li>- <u>Blood test</u> = High ESR</li> </ul> | <ul style="list-style-type: none"> <li>- <b>CXR= Absence of lung markings+Lung collapse+Deep sulcus sign</b></li> <li>- <u>Blood gases</u> = Hypoxia</li> <li>- <b>Pleural manometry</b></li> <li>=</li> <li>1) Closed : &lt; atmospheric pressure</li> <li>2) Open : = atmospheric ..</li> <li>3) Tension : &gt; atmospheric</li> </ul> | <ul style="list-style-type: none"> <li>- <b>CXR=</b></li> <li>1) Lobar P : homogenous opacity</li> <li>2) Broncho P : Patchy bilateral shadows</li> <li>3) Interstitial P : Reticular shadow</li> <li>- <u>Sputum examination</u> to detect organism</li> <li>- <u>Pleural fluid cultutre</u></li> <li>- <u>Blood tests</u> High ESR</li> </ul>                                                                                    |
| <b>Treatment</b>     | <ul style="list-style-type: none"> <li>- Treat the cause</li> <li>- Steroids and Antibiotics</li> <li>- O2 therapy</li> </ul>                                                                                                                                                                  | <ul style="list-style-type: none"> <li>- Anti-tubercilin drugs</li> </ul>                                                                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>- Intercostal tube in severe cases</li> </ul>                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>- Antibiotics eg : Azithromycin</li> <li>- Supportive and Symptomatic ttt</li> </ul>                                                                                                                                                                                                                                                                                                        |
| <b>Complications</b> |                                                                                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>- Bronchiactasis</li> <li>- Pulmonary Fibrosis</li> <li>- Mycetoma</li> <li>- Amyloidosis</li> <li>- <b>Cor Pulmonale</b></li> <li>- RF</li> <li>- Miliary TB</li> </ul>                                                                                                             |                                                                                                                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>- Septicemia</li> <li>- MOF</li> <li>- RF</li> <li>- DIC</li> <li>- Pleurisy and Pleural Effusion</li> </ul>                                                                                                                                                                                                                                                                                |
| <b>D.D</b>           |                                                                                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>- Bronchogenic carcinoma</li> <li>- Pneumonia</li> <li>- Fever of unkown origin</li> <li>- Causes of hemoptysis</li> </ul>                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Disease              | Pulmonary embolism ( ICU patient )                                                                                                                                                                                                                                                                                                                                                                                                         | Cor-Pulmonale                                                                                                                                                                                                                                                                                                                                                                                                                                | Bronchial Asthma                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Symptoms</b>      | <ul style="list-style-type: none"> <li>- Not specific symptoms = Tachycardia , Pleuritic chest pain . Pulmonary HTN , <b>Cor-pulmonale</b></li> <li>- In medium sized embolus = <b>Pleuritic chest pain</b> , Cough and hemoptysis , Dysnea</li> <li>- In acute cases = <b>Pain similar to angina</b> , sudden pulmonary HTN , acute RHF</li> <li>- <b>Finding suggestive for DVT</b> = Tenderness , swelling and redness of LL</li> </ul> | <ul style="list-style-type: none"> <li>- It is a RV enlargement due to a pulmonary disease</li> <li>Pulmonary diseases &gt; Pulmonary HTN &gt; RV enlargement &gt; RSHF</li> <li>- These pulmonary diseases may be = <ul style="list-style-type: none"> <li>• Lung collapse</li> <li>• Pneumothorax</li> <li>• Pulmonary embolism</li> <li>• COPD</li> <li>• Interstitial pulmonary fibrosis</li> <li>• Bilirubinemia</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>- <b>Recurrent attack of wheeze , SOB and chest tightness , cough</b></li> <li>- Symptoms <b>worsen at night and early morning</b></li> <li>- Associated with <b>allergen exposure</b></li> <li>- <b>Family history</b></li> </ul>                                                                                                                            |
| <b>Signs</b>         | <ul style="list-style-type: none"> <li>- <b>Hypoxia with normal CXR</b></li> <li>- <b>Fever and Jaundice may start after 24 hr</b></li> </ul>                                                                                                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>- Of the cause</li> </ul>                                                                                                                                                                                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>- Normal inbetween attacks</li> <li>- During the attack = <ol style="list-style-type: none"> <li>1) <b>Hyperinflation</b></li> <li>2) <b>Wheeze</b></li> <li>3) <b>Vesicular breath</b></li> </ol> </li> </ul>                                                                                                                                                |
| <b>Inv.</b>          | <ul style="list-style-type: none"> <li>- <u>CXR</u> = Elevated cupola of diaphragm , <b>Pulmonary infarction ( wedged shaped opacity )</b></li> <li>- <u>ECG</u> = <b>S1 Q3 T3 pattern</b> / exclude Myocardial infarction</li> <li>- <u>Echo</u> = Enlargement of RA , RV and pulmonary artery</li> <li>- <u>Pulmonary angiography</u> (avoid-invasive)</li> <li>- <u>Inv for DVT</u> = Duplex</li> </ul>                                 | <ul style="list-style-type: none"> <li>- Of the cause</li> </ul>                                                                                                                                                                                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>- <u>PFT</u> = <b>Reduced FEV1 &amp; FEV1/FVC during attack response to bronchodilators</b></li> <li>- <u>Skin prick test</u></li> <li>- <u>Blood picture</u> = <b>Eosinophilia</b></li> <li>- <u>Sputum examination</u> = Curschmann's spirals / Charcot-leyden crystals/ Creola bodies</li> <li>- <u>ECG</u> = Exclude cardiac causes of dyspnea</li> </ul> |
| <b>Treatment</b>     | <ul style="list-style-type: none"> <li>- CCU</li> <li>- Anticoagulants ( heparin , warfarin)</li> <li>- Thrombolytic therapy ( streptokinase )</li> <li>- Pulmonary embolectomy ( in massive PE )</li> </ul>                                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>- Of the cause</li> </ul>                                                                                                                                                                                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>- During attack = B2 agonist ( you may need to add anti-cholinergic drugs in persistence )</li> <li>- Inbetween attacks = Inhaled corticosteroids and long acting B2 agonist may be used according to severity and persistence</li> </ul>                                                                                                                     |
| <b>Complications</b> | <ul style="list-style-type: none"> <li>- <b>Cor-Pulmonale</b></li> <li>- Death</li> </ul>                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>- Status Asthmaticus</li> <li>- Pneumothorax</li> <li>- RF and <b>Corpulmonale</b></li> </ul>                                                                                                                                                                                                                                                                 |
| <b>D.D</b>           | <ul style="list-style-type: none"> <li>- Causes of acute chest pain = <ul style="list-style-type: none"> <li>• Myocardial infarction</li> <li>• Pericardial effusion</li> <li>• Acute pulmonary edema</li> <li>• Pneumonia</li> <li>• Tension Pneumothorax</li> <li>• Bronchial Asthma</li> </ul> </li> </ul>                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>- COPD</li> <li>- Cardiac Asthma</li> <li>- Carcinoid \$</li> <li>- Churg-Strauss Vasculitis</li> </ul>                                                                                                                                                                                                                                                       |

### Types of Bronchial Asthma :

| Differentiating parameters | Extrinsic        | Intrinsic                  |
|----------------------------|------------------|----------------------------|
| - Age of onset             | Childhood        | Middle age                 |
| - Precipitating factor     | Obvious          | Not obvious                |
| - Family history           | Allergy          | Bronchial asthma           |
| - Atopic tendency          | Usually apparent | Absent                     |
| - IgE level                | Raised           | Not raised                 |
| - Skin test                | Positive         | Negative                   |
| - Asthma                   | Intermittent     | Less labile & often severe |

|                       | Cardiac                                                | Bronchial                                |
|-----------------------|--------------------------------------------------------|------------------------------------------|
| <b>Age</b>            | Usually old                                            | Usually young                            |
| <b>History</b>        | Cardiac disease                                        | Chest disease                            |
| <b>Time of attack</b> | 2 hours after sleep                                    | Early morning                            |
| <b>Duration</b>       | Minutes                                                | Up to hours                              |
| <b>Expectoration</b>  | Minimal, but if APO occurs pink frothy                 | Viscid mucoid (mucous pellet)            |
| <b>O/E</b>            | ± Valve lesion<br>Fine basal crepitations<br>± Wheezes | Inspiratory + expiratory sibilant ronchi |
| <b>TTT</b>            | Diuretics                                              | Bronchodilators                          |



**Normal Values**

|            |                                              |                |                                      |
|------------|----------------------------------------------|----------------|--------------------------------------|
| Urea       | Up to 5.6 mmol/L                             | RR             | 12-16/min                            |
| Creatinine | ♂ = 0.74-1.35 mg/dL<br>♀ = 0.59 – 1.04 mg/dL | Pulse          | 60-100 bpm                           |
| Na         | 135 – 145 mmol/L                             | Blood pressure | 120/80 ( Diastolic pressure < 90)    |
| K          | 3.5 – 5 meq/L                                | Temperature    | 36.5 - 37.2                          |
| Ca         | 9-11 mg/dL                                   | SaO2           | 95-100%                              |
| PO4        | 3.0-4.5 mg/dL                                | PaO2           | 75-100 mmHg                          |
| Cholestrol | Less than 200 mg/dL                          | HCO3           | 22-28 mEq/L                          |
| Hb         | ♂ = 16-18    ♀ = 12-14                       | ESR            | ♂ = 10    ♀ = 12                     |
| WBC        | 4000 – 11000 / mm3                           | AST            | Up to 200 ( may reach 600 in arabs ) |

## KIDNEY CASES

| Disease          | Nephritic \$                                                                                                                                                                                                                                                                                                                                                                                                                                   | Nephrotic \$                                                                                                                                                                                                                                                                                                                                                    | AKI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | CKI                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| <b>Symptoms</b>  | <ul style="list-style-type: none"> <li>- Haematuria ( frank / microscopic )</li> <li>- Mild edema</li> <li>- Oliguria</li> <li>- Signs of uremia ( fatigue , pruritis , nausea )</li> <li>- <b>Complications =</b> <ol style="list-style-type: none"> <li>1) LSHF and IHD</li> <li>2) Cerebral atherosclerosis and Hypertensive encephalopathy</li> <li>3) Renal failure and Papilloedema</li> <li>4) Aortic dissection</li> </ol> </li> </ul> | <ul style="list-style-type: none"> <li>- Peripheral edema in adults and fascial edema in children</li> <li>- Frothy urine</li> <li>- Fatigue</li> <li>- Recurrent infection</li> </ul>                                                                                                                                                                          | <ul style="list-style-type: none"> <li>- <b>Oliguria</b></li> <li>- This is followed by Dehydration then by Improvement</li> <li>- <b>Rapid Onset</b></li> </ul>                                                                                                                                                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>- <b>GIT manifestations (</b> include stomatitis / GERD / gastritis / hepatitis / <b>late uremic dysentery )</b></li> <li>- CVS : HTN due to Na retention (80%) + Myocarditis ( HF) + Uremic pericarditis and Arrhythmia</li> <li>- <b>Chest infections ( recurrent )</b> due to decreased WBC's</li> <li>- CNS symptoms</li> <li>- Skin : Pallor and earthy look / pigmentations / pruritis / purpura )</li> </ul> |
| <b>Signs</b>     | <p><b>HTN</b><br/><b>Mild Proteinuria ( less than 3.5 gm/d )</b></p>                                                                                                                                                                                                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>- <b>Proteinuria ( more than 3.5 gm/d )</b></li> <li>- <b>Low serum albumin</b></li> <li>- <b>Dyslipidemia</b></li> <li>- <b>Hypercoagulability (</b> loss of antithrombin III )</li> <li>- <b>Reduced immunity (</b> loss of immunoglobulins</li> </ul>                                                                 | <ul style="list-style-type: none"> <li>- Manifestation of <b>hypervolemia :</b> <ol style="list-style-type: none"> <li>1) Congested neck veins</li> <li>2) Headache</li> <li>3) HTN</li> <li>4) Pulmonary edema</li> </ol> </li> <li>- In phase of Oliguria : <ul style="list-style-type: none"> <li>· hyperkalemia ,</li> <li>· hyponatremia</li> <li>· Acidosis</li> <li>· Uremia</li> </ul> </li> <li>- <b>Presence of pre-renal / postrenal disease</b></li> </ul>                                                                    | <ul style="list-style-type: none"> <li>- <b>Bleeding tendency</b></li> <li>- <b>Renal Osteodystrophy</b></li> <li>- <b>Anemia due to decrease erythropoietin</b></li> <li>- <b>Hyperparathyroidism</b></li> <li>- <b>Inactive Vit- D = Osteomalacia</b></li> <li>- <b>Hypothyroidism</b></li> <li>- <b>Increased triglycerides</b></li> <li>- <b>Muscle wasting</b></li> <li>- <b>Presence of renal disease</b></li> </ul>                                 |
| <b>Inv</b>       | <p><u>Urine examination =</u><br/><b>Red blood cell casts</b><br/><b>Coca Cola like urine</b><br/><u>Blood examination =</u><br/>High ESR<br/><b>High Na , K</b><br/><u>Renal function test =</u><br/>Impaired glomeruli<br/><u>Investigation of the cause</u><br/>= eg ASO titre / Anti streptokinase</p>                                                                                                                                     | <p><u>Urine examination =</u><br/>Hyaline and Lipid casts<br/>Proteinuria<br/><u>Blood examination =</u><br/>High ESR<br/>High cholesterol , TG , LDL<br/><b>Decreased Na , K , Ca</b></p>                                                                                                                                                                      | <ul style="list-style-type: none"> <li>- <u>Urine examination :</u> <ul style="list-style-type: none"> <li>· Fixed Specific Gravity (1010)</li> <li>· <b>Muddy Brown Granular casts</b></li> </ul> </li> <li>- <u>Blood examination :</u> <ul style="list-style-type: none"> <li>· <b>High PO4 + K + Urea + Creatinine</b></li> <li>· <b>Low Na ( dilutional )</b></li> </ul> </li> <li>- <u>Investigations of the cause</u> <ul style="list-style-type: none"> <li>· Angiography</li> <li>· Plain film of abdomen</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>- <u>Urine exam:</u> <ul style="list-style-type: none"> <li>· Mild <b>Polyuria</b></li> <li>· Fixed Specific Gravity</li> </ul> </li> <li>- <b>High : Na (80%) / K in end stage / PO4 / H+</b></li> <li>- <b>Ca is low then normal then high</b></li> <li>- <u>Renal function test :</u> High urea and creatinine</li> <li>- <u>US : Shrunken Kidney</u></li> </ul>                                                 |
| <b>Treatment</b> | <ul style="list-style-type: none"> <li>- Diet</li> <li>- HTN ttt</li> <li>- Antibiotics as crystalline penicillin</li> <li>- <b>CORTISONE CONTRAINDICATED</b></li> <li>- Dialysis in renal failure</li> </ul>                                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>- Diet</li> <li>- Diuretics for edema</li> <li>- ACEI to decrease proteinuria</li> <li>- Antibiotic for repeated infection</li> <li>- TTT of electrolyte imbalance</li> <li>- Oral anticoagulants for hypercoagulability</li> <li>- Salt free albumin in resistant cases</li> <li>- Dialysis in renal failure</li> </ul> | <ul style="list-style-type: none"> <li>- Urinary catheter ( assess urine )</li> <li>- Central venous catheter ( assess blood )</li> <li>- Proper diet</li> <li>- Lasix for hypervolemia</li> <li>- HTN ttt</li> <li>- HF ttt</li> <li>- HyperK+ = NaHCO3 / Ca gluconate</li> <li>- Renal replacement therapy ( Dialysis )</li> <li>- Renal biopsy in severe ATN ( cortical necrosis )</li> </ul>                                                                                                                                          | <ul style="list-style-type: none"> <li>- Proper diet</li> <li>- Symptomatic treatment</li> <li>- Dialysis for Uremia and severe renal damage</li> <li>- Renal transplantation may be required</li> </ul>                                                                                                                                                                                                                                                   |

# CARDIAC CASES

| Disease         | Ischemic Heart disease                                                                                                                                                                                                                                                                                                                                                                                   | Myocardial Infarction ( CCU Patient )                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RHF                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | LHF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Symptoms</b> | <p>It may be asymptomatic or represent with picture of :</p> <ol style="list-style-type: none"> <li>1) Angina</li> <li>2) MI</li> <li>3) HF</li> <li>4) Arrhythmia</li> <li>5) Sudden death</li> </ol> <p>- Symptoms of Angina :</p> <p><b>Retrosternal Chest pain compressing / constricting in character, Radiates to left shoulder and inner side of left arm , It takes less than 15 minutes</b></p> | <ul style="list-style-type: none"> <li>- Chest Pain radiating to the epigastric area ( never to umbilicus ) it is prolonged and not relieved by sublingual nitrates</li> <li>- It can be painless in Elderly / Diabetic / Transplanted heart</li> </ul>                                                                                                                                                                                                                                                         | <p><b>Main = Pericardial effusion / COPD / Obesity / Liver cirrhosis</b></p> <p><u>Symptoms of low cardiac output ' LHF '</u></p> <p><u>Symptoms of Systemic Congestion :</u></p> <ol style="list-style-type: none"> <li>1) Insomina</li> <li>2) Sweating</li> <li>3) Edema of LL</li> <li>4) Ascitis</li> <li>5) Dyspepsia</li> </ol>                                                                                                                                           | <p><b>Main = Dyspnea and Orthopnea</b></p> <p><u>Symptoms of low cardiac output :</u></p> <ol style="list-style-type: none"> <li>1) Syncope / Headache</li> <li>2) Cold peripherals</li> <li>3) Oliguria</li> <li>4) Fatigue</li> <li>5) Intermittent Claudications</li> </ol> <p><u>Symptoms of pulmonary congestion :</u></p> <ol style="list-style-type: none"> <li>1) Dyspnea</li> <li>2) Exertional cough</li> <li>3) Recurrent chest infection</li> <li>4) Hemoptysis</li> </ol>                            |
| <b>Signs</b>    | <ul style="list-style-type: none"> <li>- Pallor</li> <li>- Tachypnea</li> <li>- HTN</li> <li>- <b>Weak S1</b></li> <li>- <b>S2 with reversed splitting</b></li> <li>- <b>Murmur of MR</b> ( due to papillary ms. dysfunction</li> </ul>                                                                                                                                                                  | <ul style="list-style-type: none"> <li>- <b>Pallor , Sweaty , Fever , Nausea and Vomitin</b></li> <li>- Pulse = <b>Tachy in cardiogenic shock / Brady in neurogenic shock</b></li> <li>- <b>HTN then hypotension due to shock or LVF</b></li> <li>- <b>Congested neck viens in RV infarction</b></li> </ul>                                                                                                                                                                                                     | <p><u>Signs of low cardiac output 'LHF'</u></p> <p><u>Signs of Systemic Congestion :</u></p> <ol style="list-style-type: none"> <li>1) Congested neck viens</li> <li>2) Enlarged tender soft Liver</li> <li>3) Pleural effusion</li> <li>4) Malabsorption</li> </ol> <p><u>Signs of the cause :</u> eg LSHF or pulmonary HTN</p> <p><u>Cardiac Signs :</u></p> <p><b>RV enlargement</b></p> <p><b>Tachycardia</b></p> <p><b>Gallop</b></p> <p><b>Murmur of functional TR</b></p> | <p><u>Signs of low cardiac output :</u></p> <ol style="list-style-type: none"> <li>1) Ischemic Heart Disease</li> <li>2) Low systolic bl pressure</li> <li>3) Weak pulse</li> </ol> <p><u>Signs of pulmonary congestion :</u></p> <ol style="list-style-type: none"> <li>1) Pulmonary edema</li> <li>2) Bilateral basal crepitations</li> </ol> <p><u>Cardiac Signs :</u></p> <ol style="list-style-type: none"> <li>1) LV enlargement</li> <li>2) Tachycardia</li> <li>3) Gallop and pulsus alternans</li> </ol> |
| <b>Inv</b>      | <p><u>ECG =</u></p> <ol style="list-style-type: none"> <li>1) Resting : ST segment depressed during attack and inverted T-wave</li> <li>2) Exercise : will lead to typical angina pain</li> </ol> <p><u>Echo</u></p> <p><u>Cardiac scan</u> by radioactive thallium 201</p> <p><u>Coronary angiography</u></p> <p><u>Cardiac enzymes :</u></p> <p><b>Normal</b></p>                                      | <p><u>ECG =</u></p> <ol style="list-style-type: none"> <li>1) ST elevation in transmural infarction</li> <li>2) Non ST-Elevation in subendocardial infarction</li> </ol> <p><u>Echo</u> = may detect complications as MR or aneurysm</p> <p><u>Cardiac scan</u></p> <p><u>Coronary angiography</u></p> <p><u>ESR increas</u></p> <p><u>Cardiac Enzyme :</u></p> <ol style="list-style-type: none"> <li>1)CPK</li> <li>2) CPK-MB</li> <li>3) LDH</li> <li>4) Troponin ( most sensitive and specific )</li> </ol> | <p><u>CXR=</u> Chamber enlargement / Pulmonary Congestion in LHF</p> <p><u>ECG =</u> detect MI</p> <p><u>Echo</u> = measure COP and Ejection fraction</p> <p><u>BNP</u></p>                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|                     |                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                 |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Treatment</b>    | <ul style="list-style-type: none"> <li>- Nitrates</li> <li>- B-blocker</li> <li>- Ca-channel Blocker</li> <li>- Coronary revascularization if no respond to ttt</li> <li>- Sublingual nitroglycerine during the attack</li> </ul> | <ul style="list-style-type: none"> <li>- Admission to CCU</li> <li>- Morphine and Nitroglycerine for pain</li> <li>- Thrombolytic therapy <b>beneficial within 12 hours</b> eg Streptokinase (<b>contraindicated in bleeding disorder or aortic dissection or pericarditis or sever HTN</b>)</li> <li>- PTCA</li> </ul>           | <ul style="list-style-type: none"> <li>- Digitalis ( Lasix / Thiazide )</li> <li>- B-blocker ( Metoprolol )</li> <li>- Diuretics</li> <li>- Vasodilators ( Na nitroprusside / ACEI )</li> </ul> |
| <b>Complication</b> |                                                                                                                                                                                                                                   | <ol style="list-style-type: none"> <li>1) Cardiogenic and Neurogenic Shock</li> <li>2) Acute HF and Arrythmia</li> <li>3) Myocardial rupture</li> <li>4) Dry Pericarditis</li> <li>5) Sudden Death</li> <li>6) Dresslers Syndrome</li> <li>7) Post infarction angina</li> <li>8) Aneurysm</li> <li>9) Thrombo-embolism</li> </ol> |                                                                                                                                                                                                 |
| <b>D.D</b>          |                                                                                                                                                                                                                                   | <ol style="list-style-type: none"> <li>1) Aortic dissection</li> <li>2) Acute dry pericarditis</li> <li>3) Angina</li> <li>4) Pulmonary embolism</li> </ol>                                                                                                                                                                       |                                                                                                                                                                                                 |

|                                      | <b>ANGINA</b>                          | <b>HEART ATTACK</b>                                                            |
|--------------------------------------|----------------------------------------|--------------------------------------------------------------------------------|
| <b>Pain in the chest area</b>        | Heaviness in chest                     | Deep pain in the chest                                                         |
| <b>Pain radiates to jaw and neck</b> | Yes                                    | Yes                                                                            |
| <b>Duration</b>                      | Lasts for 5-10 minutes                 | Lasts for longer (> 30 mins)                                                   |
| <b>Triggers</b>                      | Exertion, stress, temperature extremes | None                                                                           |
| <b>Relief with</b>                   | Rest and Nitroglycerin                 | Very little relief with rest / Nitroglycerin.<br>Morphine helps in pain relief |

| <b>Stable Angina</b>                 | <b>Unstable Angina</b>  |
|--------------------------------------|-------------------------|
| Episodic                             | Severe and of New onset |
| Crescendo - Decrescendo              | Crescendo pattern       |
| Occurs on exertion, relieved by rest | Occurs at rest          |
| Lasts 2-5 mins                       | Lasts > 10 min          |