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Cardiology lecture notes

Chest Pain:

1. MI (ST elevation-STEMI)
2. Stable Angina
3. Pneumonia
4. PE
5. Pneumothorax
6. Aortic dissection
7. GERD
8. Musculoskeletal pain
9. Pericarditis
10. Acute coronary syndrome
11. Unstable Angina

Acute coronary syndrome (ACS) consists of: -

- STEMI
- NSTEMI
- Unstable Angina

Unstable angina is angina which is occurs at rest or it has increased in frequency or duration or it is occurring with less effort than it used to happen before. It is therefore difficult to differentiate from Myocardial infarction.

NSTEMI stands for Non ST elevation myocardial infarction. This simply means that one can have myocardial infarction without ST segment elevation on an ECG i.e. normal ECG or ST depression. It is therefore difficult to differentiate from unstable angina.

STEMI stands for ST elevation myocardial infarction. This simply means that the patient will have elevation of ST segment on an ECG. Hence before you do an ECG, this could still be difficult to differentiate from unstable angina and NSTEMI.

NB: It is difficult to differentiate between unstable angina and NSTEMI using an ECG because in both cases ECG can be normal or show ST segment or T wave abnormalities may be seen, therefore you need to do **cardiac enzymes** to differentiate them.

The terminology **Acute Coronary Syndrome (ACS)** is used to describe the way these 3 conditions present. So before you can differentiate between these 3 conditions, this is the way to treat them.

TREATMENT OF ACS

- 1.O₂
- 2.GTN
- 3.Aspirin 300mg
4. Clopidogrel 300mg
- 5.Morphine and Metoclopramide
- 6.LMWH(Enoxaparin and Dalteparin)
- 7.Beta-blockers – as anti angina

MYOCARDIAL INFARCTION

1. NSTEMI (NON ST ELEVATION MYOCARDIAL INFARCTION)

- Sudden onset central, crushing chest pain radiating to throat/ left arm
- Lasting > 20 min
- Associated with nausea & vomiting, sweating in the palms

ECG: ST depression or T wave inversion ,Troponin is raised.

If no changes are seen on ECG but the cardiac enzymes are raised then it is NSTEMI

We need cardiac enzymes to make the diagnosis

Symptoms

- i. Central chest pain, crushing in nature, radiating to Left arm lasting greater than 20 min
- ii. Complaining of nausea, vomiting, sweating
- iii. Silent MI or a typical chest pain usually in diabetic patient.
- iv. May lead to LVF leading to Pul.oedema, which presents with Tachycardia, low BP and SOB.

2. STEMI (ST ELEVATION MYOCARDIAL INFARCTION)

- Sudden onset of chest pain which is central, crushing, retrosternal
- Radiating to left arm or neck
- Associated with nausea, vomiting, sweating
- ECG: ST elevation or new LBBB
- Cardiac enzymes are raised
- when there is STEMI cardiac enzymes are not needed to make the diagnosis. **Diagnosis is from the ECG**

CLASSIFICATION OF ST ELEVATION MYOCARDIAL INFARCTION

- i. ST elevation in lead II, III and AVF - indicates inferior MI
- ii. ST elevation in V₁-V₂ - indicates septal MI
- iii. ST elevation in V₃-V₄ - indicates ant. MI
- iv. ST elevation in I, aVL, V₅, V₆ - indicates Lateral MI

Other ECG changes involve, T wave inversion & Q waves-always MI

CXR may show Pulmonary Oedema in the form of bilateral fluffy opacities or it may show cardiomegaly or it may be normal

MANAGEMENT OF STEMI OR SIMPLY MYOCARDIAL INFARCTION

1. O₂

2. Aspirin 300 mg then 75 mg everyday
3. Morphine iv and metoclopramide (anti sickness/ nausea)
4. GTN sublingual
5. Percutaneous coronary intervention (angioplasty) or Thrombolysis if PCA is not available

When the patient Is stable

1. Continue to give ACE- I even with normal BP
2. Beta- BLOCKERS(anti angina)

Indication for thrombolysis

1. Chest pain <12 hrs from onset
2. ST elevation in limb leads $\geq 1\text{mm}$ in 2 or more contiguous leads
3. ST elevation in chest leads $\geq 2\text{mm}$ in 2 more contiguous leads
4. New LBBB

Contra indications for thrombolysis

1. Active peptic ulcer
2. Aortic dissection
3. Brain tumour
4. Recent head injury
5. Recent haemorrhagic stroke
6. Acute pancreatitis
7. Active lung cavitation
8. Recent Surgery or trauma
9. Internal PV bleed
10. Oesophageal varices
11. Previous allergy
12. Pregnancy or < 18 weeks post natal

Drug of choice for thrombolysis is Streptokinase. **Do not repeat within 4 days of 1st dose.**

- If there is history of previous use of streptokinase, then use TPA (Alteplase or tenecteplase)-tissue plasminogen activator

Complications of MI

1. Cardiac arrest/ cardiogenic shock will present with increased HR, decreased BP
2. Bradycardia: - (i) sinus bradycardia is treated with Rx with atropine or if there is no response to atropine, then do cardiac pacing.
 1. First degree heart block \rightarrow prolonged PR interval
 2. Second degree heart block, of which there are 2 types:
 - a) Mobitz 1 (Wenckebach): PR interval is not fixed, the PR interval becomes progressively prolonged until a P wave is not transmitted and there is a missed QRS.
 - b) Mobitz II : has frequent missing QRS complexes and requires cardiac pacing. Eg. 3:1. This can be regular or irregular. It requires cardiac pacing.
 3. Complete heart block requires temporary pacing - if not resolving then a permanent pacemaker should be inserted.
 4. Bundle branch block. This can either be LBBB or RBBB.

3. VT (ventricular tachycardia)

- Palpitations or arrhythmias within 48 hrs post MI is always VT until proven otherwise

4. Left Ventricular Failure

- Shortness of breath
- Increased HR, decreased BP
- Pulmonary oedema may lead to haemoptysis
- **Treatment: IV furosemide**

5. Pericarditis \rightarrow Chest pain relieved by sitting forward, saddle shaped widespread ST elevation, pleuritic chest pain with pericardial rub, with or without fever

Treatment: NSAIDS

6. DVT/PE due to immobility- Please see pulmonary embolism.

7. Cardiac tamponade Triad of (i) muffled heart sound

(ii) decreased BP

(iii) High heart rate

(iv) Engorged neck veins i.e raised JVP

(v) chest x-ray shows globular heart

Investigation - echocardiogram

Treatment: - Pericardiocentesis

8. Mitral regurgitation

- Due to papillary muscle rupture or chorda rupture secondary to ischemia
- Presents with Pul. Oedema due to LVF
- Mitral regurgitation - pansystolic murmur at apex radiating to axilla

9. Ventricular septal defect

- Harsh Pan systolic murmurs-left sternal edge
- Increased JVP
- Cardiac failure

Investigation: - echocardiogram

Treatment: - Surgery

10. Dressler's Syndrome

- Recurrent Pericarditis, pleural effusion, fever, anaemia
- ESR high
- 1 – 3 weeks post MI

11. Left Ventricular Aneurysm: occurs 4 – 6 weeks post MI

- Presents with LVF , recurrent VT
- Persistent ST elevation 4-6 weeks
- Systemic emboli

3. Unstable Angina

- Angina at rest or angina with increased frequency severity or duration
- Associated with sweating and nausea.
- ECG: shows ST depression or T wave inversion
- Cardiac enzymes are normal

4. Stable Angina

- Exertional pain (pain on exercise when you walk a certain distance eg. 100 meters)
- Radiates to the left arm lasting < 20mins
- Transient ECG changes (usually ST depression or T-wave inversion)
- Cardiac enzymes are normal

Investigation:

- +ve exercise tolerance test (exercise ECG +ve)
- +ve coronary angiography (arteriosclerosis)

5. Pericarditis

- History of viral like illness (URTI) or coryza symptoms (running nose, cough, sneezing)
- Pleuritic chest pain i.e. chest pain on inspiration / gets worse on inspiration.
- Chest pain worse on lying flat, but relieved on leaning forward.
- ECG: Saddle shaped ST elevation in all leads (widespread)
- On examination: Pericardial rub
- **Treatment: NSAIDS**

6. Dissecting thoracic aneurysm

- Sudden onset of central tearing chest pain radiating to the back
- With or without history of trauma
- Sometimes pain radiates between the inter scapular region
- patient is in shock (increased HR, low BP)
- Different pulses & BP in each arm
- History of intermittent claudication and hypertension
- The cause of aneurysm is arteriosclerosis
- Chest X-Ray: shows widened mediastinum
- HYPERTENSION causes atherosclerosis and this causes aneurysm
- Investigation:CT scan, USS, Transesophageal echocardiogram
- **Treatment: surgery**

7. Pulmonary Embolism (PE)

- Patient complains of shortness of breath or sudden onset of pleuritic chest pain (worse on inspiration)
- Usually in a young female
- May have history of OCP use, long flight, pelvic surgery e.g hip replacement or hysterectomy
- Possible signs of DVT i.e, swollen legs, easy tenderness or erythema
- ECG:
 1. T wave inversion (V₁- V₄)
 2. RBBB(S₁Q₁₁₁T₁₁₁ syndrome) with Deep S wave, Pathological Q wave, Inverted T wave
 3. Sinus tachycardia
 4. Atrial fibrillation

8. Pneumothorax

- Young, thin, tall male patients
- Also common in patients with COPD
- Sudden onset of pleuritic chest pain
- Commonly starting on exercise(playing football or riding bicycle)
- If trachea is shifted it is Tension Pneumothorax
- If trachea is shifted to the left, the pneumothorax is on the right and vice versa
- If the trachea is not shifted or it is central the it is only Simple pneumothorax
- Always hyper- resonance on percussion on the same side of Pneumothorax but opposite side of trachea shift

9. Pneumonia

- Fever, cough, sputum, pleuritic chest pain
- Chest X-Ray: shows consolidation
- Dullness to percussion, decreased air entry, crackles on auscultation unilateral.

10. Musculoskeletal pain

- Often follows strenuous exercise or lifting things or being in the gym
- Chest X-Ray, ECG, cardiac enzymes normal .
- Tenderness on the chest wall on palpation.

11. GERD

- History of indigestion, hiatus hernia or reflux symptoms
- Retrosternal chest pain, burning in nature
- Worst at night or when lying flat
- Chest pain relieved with antacids
- Sour taste in the mouth

PALPITATIONS**CAUSES**

1. AF-atrial fibrillation
2. SVT - supraventricular tachycardia
3. VT –ventricular tachycardia
4. VF - ventricular fibrillation
5. Anxiety

6. Pheochromocytoma
7. Atrial flutters
8. Ectopic beats-usually ventricular ectopic beats.
9. Atrial myxoma

SUPRAVENTRICULAR TACHYCARDIA = This is any tachyarrhythmia originating above the ventricles. It can either be

- a. **Regular or**
- b. **Irregular**

1. Causes of Regular supra ventricular tachycardia

- Sinus tachycardia
- Atrial flutter - suspect this if the heart rate-is 150
- AVRT (i.e. with accessory pathway e.g. WPW)-atrial ventricular re-entrant tachycardia(Wolf Parkinson White)
- AVN RT-atrial ventricular node re-entrant tachycardia
- Intra-Atrial re-entry tachycardia

NB: if you see ECG with heart rate 150 think of atrial flutter.

2. Irregular supra ventricular tachycardia is usually atrial fibrillation

ATRIAL FIBRILLATION (AF): presents as palpitations(300-400)

On examination: - irregularly irregular pulse

ECG - shows no P waves and irregular QRS complexes

Classification: acute, chronic and paroxysmal.

Management of AF:

1. Chronic AF

Rate control drugs

- (i) Beta- blocker (metoprolol)
- (ii) Calcium channel antagonist (diltiazem/ verapamil)
- (iii) Digoxin

NB:If there is AF + heart failure the drug of choice- Digoxin

The mainstay of treatment in AF is rate control and not cardioversion.

AF needs anticoagulants

- a. Warfarin (maintain INR 2-3)-to prevent embolism
- b. Aspirin if <65 yrs of age and no HTN, no DM, no LV dysfunction, no valvular heart disease, no MI/TIA.

NB: use the *CHAD 2 score* to decide whether patient needs to be on aspirin or warfarin.

2. Paroxysmal AF: Flecanide (pill in the pocket),sotalol. Anticoagulation is also needed

The appropriate investigation for paroxysmal AF is 24 hour ECG (ambulatory ECG)

3. Acute AF:less than or equal to 48 hrs duration

- If very ill or haemodynamically unstable do electrical cardioversion

Rate control medication for Acute AF:

1) calcium channel blocker (verapamil & diltiazem)

2)beta blocker metoprolol 3) Digoxin

Arrhythmias

There are 2 types of arrhythmias:

- a. Tachy-arrhythmias (HR > 100/min)
- b. Brady-arrhythmias (HR < 60/min)

Management of tachy-arrhythmias:

First look for **signs of instability** which are

- Reduced consciousness
- Systolic BP < 90 mmHg
- Chest pain (for VT only)
- Heart failure
- Heart rate > 150

1) If **signs of instability are present** then give DC shock and if DC shock not helping then give IV Amiodarone.

NB. DC shock is the same as electrical cardioversion. Amiodarone is used for chemical cardioversion.

2) If patient with tachycardia is **stable** then check if it is broad complex tachycardia (eg VT or VF) or narrow complex tachycardia.

- **Narrow complex tachycardia** (QRS < 0.12 secs on ECG)
 - If narrow complex tachycardia and **irregular** then most likely it is AF.
 - If narrow complex tachycardia and **regular** then it can be sinus tachycardia, Atrial flutter, WPW syndrome or atrial tachycardia. In this case perform vasovagal manoeuvre or carotid massage, if that does not help then give Adenosine.
 - If vasovagal manoeuvre/carotid massage or adenosine terminates the arrhythmia then it is AVRT (Wolf Parkinson White syndrome).
 - If vasavagal manoeuvre and adenosine do not terminate the arrhythmia but just slows the rate down, then it is likely to be atrial flutter, atrial tachycardia or atrial fibrillation.
 - **SVT (Supra-ventricular tachycardia)** is terminology which suggests any arrhythmia arising above the ventricles.
 - It is usually difficult to differentiate between AF, Atrial flutter, Atrial tachycardia and WPW syndrome. That is why we perform vasovagal manoeuvre/carotid massage or give adenosine to slow down the heart rate so that we can read and interpret the ECG properly. If it terminates with above methods then it is WPW.
- **Broad complex tachycardia** (QRS > 0.12 secs on ECG)
 - It can also be either regular or irregular.
 - If it is **irregular** then it is either **VF (Ventricular fibrillation) or torsades de pointe**. Give IV Magnesium (**Mg 2+**) for torsades de pointe and **DC shock for VF**.
 - Ventricular fibrillation usually does not present with palpitations. It presents with collapse.
 - If it is **regular** then it is more likely to be **VT (Ventricular tachycardia)**. Treat patient with **amiodarone** unless patient is unstable in which case he needs DC shock. Initial dose for amiodarone is 300 mg.

NB: If patient with arrhythmias is unstable give DC shock no matter what type of arrhythmia it is, narrow or broad complex tachycardia.

- If there is AVRT which involves accessory pathway
E.g. **WPW: digoxin is CI** because they block AV node not accessory pathway & make symptoms worse

- **Management of SVT:** -most of the time they mean WPW.

1. Valsalva manoeuvre (carotid sinus massage)

No help

2) Give adenosine 6 mg

No help

9 mg 12 mg 18 mg

NB: - 1. Or 2. Terminates AVRT (Atrial ventricular re-entrant tachycardia) and AVNRT (Atrioventricular node re-entrant tachycardia)- will bring it to normal rhythm

-Therefore if arrhythmias is controlled by 1) or 2) it means it's WPW.

1. Or 2. will cause transient block and review whether it is AF, Atrial flutter, Atrial Tachycardia (but it will not terminate these, slow them down)

NB: - Atrial flutters medication is B- blockers i.e. metoprolol treat just like Atrial fibrillation.

- Ventricular Fibrillation does not present with palpitations. It presents with collapse and is incompatible with life.

- A patient with VF is usually unstable.

2. AF: There is irregular pulse on examination

Patient experiences palpitations and this is usually a common complaint.

Symptoms: SOB, chest pain, collapse, palpitations

Causes: -

- A. IHD (MI, Angina)
- B. Mitral valve disease esp. Mitral Stenosis
- C. HTN

- D. Heart failure
- E. Pneumonia
- F. PE
- G. Atrial myxoma - tumor of heart muscle
- H. Thyrotoxicosis
- I. Alcohol
- J. Cardiomyopathy

3. Ectopic beats – usually ventricular ectopics

Causes: - coffee, alcohol, smoking

Management: - 1. If infrequent ectopics, manage with life style modification e.g. stop smoking, reduce caffeine, reduce alcohol.

NB: Patients usually complain of missing beats or pounding in the chest

4. Atrial flutter

- Commonly secondary to valvular heart disease or IHD
- HR 300 with 2:1 block

NB: if HR= 150 think of Atrial Flutter.

NB: - VF Never presents with palpitations, it presents with collapse

-Patient cannot tolerate VF

-Always haemodynamically unstable

-Cardioversion is the only option

5. Anxiety

- Young female
- Palpitation, sweating, perioral paresthesia, SOB
- CO₂ is low (PaCO₂ is decreased) due to hyperventilation
- PaO₂ is normal or high

6. Thyrotoxicosis/ hyperthyroidism

- Presents with AF, tachycardia, sweating, diarrhoea, palpitation
- Wt. Loss despite good appetite, oligomenorrhoea

7. Atrial myxoma

- Benign cardiac tumour
- May present with palpitations which resolve when sitting up but worse when lying flat
- Weight loss, fever, may cause AF

8. Pheochromocytoma

- Catecholamine producing tumours from adrenal glands
- Episodic (on & off) headaches, sweating, tachycardia, hypertension
- Anxiety attacks: - tremor, palpitation

Investigations: - urinary catecholamines (which are adrenaline, Nora- adrenaline and dopamine)

Management of Brady-arrhythmias:

Patients with brady-arrhythmias can also be either stable or unstable.

Signs of instability:

- Systolic BP < 90 mmHg
 - HR < 40/min
 - Heart failure
 - Reduced consciousness
-
- If patient is unstable give atropine and if atropine not effective then do cardiac pacing.
 - If patient is stable then check for the risk factors of asystole (chance that heart will stop at any time) e.g. Mobitz type II block, complete heart block, recent systole or ventricular pause.
 - If any of the above risk factors present then give atropine and subsequent cardiac pacing if did not respond to atropine.

TYPES OF ANGINA

- I. Stable angina - Angina which comes with certain amount of exercise and relieved by rest. The patient can predict it. The pain usually lasts less than 20 minutes and responds to GTN.
- II. Unstable angina
- III. Decubitis angina - the patient experiences pain on lying flat
- IV. Prinzmetal/ variant angina is due to coronary artery spasm, ST elevation for a short period of time which resolves quickly.

INVESTIGATION OF STABLE ANGINA

- Resting ECG
- If resting ECG is normal then observe, If abnormal or shows blockage then do angiography

MANAGEMENT-

1. Aspirin-LOWER DOSE
2. Beta- blockers e.g- atenolol
3. GTN sub lingual (Nitroglycerine)
4. Calcium channel blockers (amlodipine or diltiazem)
5. Statin if cholesterol > 4 mmol/ L
6. If symptoms not controlled then add Nicorandil (K⁺ channel activator)
7. Life style modification-stop smoking, reduce alcohol intake, wt.loss.
8. Prinzmetal Angina: Treat with Calcium channel blocker (1st choice) i.e. amlodipine or diltiazem

Heart Failure:

Types:

1. **Left ventricular failure (LVF)**
2. **Right ventricular failure (RVF)**
3. **Congestive heart failure (CHF) - a combination of both left and right ventricular failure**

Left ventricular failure (LVF)

- Dyspnoea
- Orthopnoea
 - PND (paroxysmal nocturnal dyspnea)
 - Pinky frothy sputum
 - (Pulmonary Oedema)
 - Cardiac wheeze

Right Ventricular Failure R(VF)

- Peripheral oedema
- JVP/ engorged neck veins
- Ascites
- Peripheral edema
- hepatomegaly

LVF+ RVF = CCF (congestive cardiac failure)

Investigation: echocardiogram - to see LV function

Chest X-Ray→ cardiomegaly, bilateral fluffy opacities on the chest x-ray studies indicates pulmonary oedema

Heart failure can also be classified into Acute and Chronic Heart Failure

1. Acute HF
1. Commonly due to Left ventricular failure leading to pulmonary oedema

Treatment of Pulmonary Oedema

1. Sit patient up in bed
2. O₂
3. IV Diamorphine+ metaclopromide

4. IV Furosemide (main Rx)
5. GTN if BP greater than 100

2. Chronic HF

Treatment of chronic HF

1. diuretics → Give loop diuretics e.g. → furosemide

-If not helping add thiazide diuretic (e.g bendroflumethiazide)

NB: spironolactone if K^+ < 3.2mmol/L

1. ACE- I eg lisinopril,enalapril esp if there is LV dysfunction

Side Effect: Dry cough

If cough problematic then consider ARBs (Angiotension receptor blocker) e.g. → condesatan or losartan

1. Beta- blockers → e.g carvedilol
2. Spironolactone → if still symptomatic despite all the above Rx.
3. Digoxin → if AF with HF then add digoxin
4. Isosorbide mononitrate to reduce the preload of the heart (vasodilation)

HYPERTENSION

CAUSES:

1. Essential hypertension-common in 95%, usually elderly patients
2. Coarctation of Aorta - Hypertension, young patient, chronic headache, radiofemoral delay
3. Polycystic kidney disease-bilateral loin pains, haematuria, hypertension, renal failure, family history.
4. Renal artery stenosis- Hypertension, abdominal bruit. ACE-I contraindicated.
5. Pheochromocytoma- episodic headaches, episodic hypertension, flushing palpitations all intermittent
6. Conn's Syndrome- Hypertension, low potassium, due to over production of aldosterone, high sodium
7. Cushing Syndrome - Typical features are an obese patient usually central obesity, hypertension, excessive facial hair, abdominal striae

Essential Hypertension

- 95% of all cases of hypertension
- Usually asymptomatic until end organ damage eg hypertensive retinopathy, nephropathy
- When to treat?

Only when BP is greater than 160/100 mmHg

Classification of Essential HTN

	Systolic	Diastolic
Normal	<140	<90
Mild HTN	140-159	90-99
Moderate HTN	160-179	100-109
Severe HTN	≥ 180	≥ 110

NB: - HTN is BP ≥ 140/90 mmHg

Management of hypertension

BP less than 160/90 -Only lifestyle modifications

BP more than 160/100 - lifestyle modification and medication

MEDICATIONS:

A=ACE-i B=B-BLOCKER C=CALCIUM CHANNEL BLOCKER D=DIURETICS

LIFE STYLE: stop smoking, reduce alcohol, weight loss, do exercise.

Age Less than or equal to 55 give following medications:

1. **A** or B

- 2.A+C
- 3.A+C+D
- 4.A+C+D+B

Age greater than 55 or black people (afro-caribbean) give following medications:

- 1.C or D
- 2.A+C
- 3.A+C+D
- 4.A+C+D+B

HEART MURMURS

1.Mitral Stenosis

- Mid diastolic murmur at the apex
- Apex beat is tapping in nature
- Commonly causes AF and pulmonary oedema

2.Mitral Regurgitation

- Pansystolic murmur at the apex
- Radiates to the axilla
- Apex beat is displaced
- Also causes LVF and pulmonary oedema

3.Ventricular Septal Defect

- Harsh pansystolic murmur at left sternal edge
- If it's a child it's congenital
- In an adult it usually common after MI

4.Tricuspid regurgitation

- Soft pansystolic murmur at left sternal edge or 4th rib
- Common in intravenous drug abusers
- Causes RVF(high JVP,peripheral edema,enlarged liver)

5.Aortic regurgitation

- Early diastolic murmur at left lower sternal edge
- Collapsing pulse or water hammer pulse or bounding pulse

6.Aortic stenosis

- Ejection systolic murmur in the right second intercostal space
- Radiates to carotids
- Presents with dizziness or syncope on exercise
- Slow rising pulse

7. Hypertrophic Obstructive Cardiomyopathy (HOCM)

- History of sudden death
- Jerky pulse
- Mid systolic murmur
- Loudest at left sternal edge
- Common in young sports man esp. footballers

8. Patent Ductus Arteriosus

- Machinery like murmur
- Throughout systole and diastole

9.Atrial septal defect

- Congenital abnormalities
- Aystolic murmur in upper left sternal edge
- Usually in young children it causes cyanosis

10.Coarctation of the aorta

- Any palpable femoral pulses
- Hypertension
- Radiofemoral delay

NB:Investigation of choice for all murmurs is echocardiogram.

CONGENITAL HEART DISEASE

CLASSIFICATION

1. Cyanotic
2. Non-cyanotic

CYANOTIC:

1. Transposition of great vessel(aorta and pulmonary trunks)
2. Truncus arteriosus
3. Tetralogy of Fallot-(right ventricular hypertrophy,pulmonary stenosis,VSD,over- riding aorta.chest x-ray shows boot shaped heart)
4. Pulmonary atresia
5. Tricuspid atresia

NON CYANOTIC

- 1.-ASD (Atrial septal defect)
- 2.VSD
- 3.-Patent ductus arteriosus
- 4.-coarctation of aorta
- 5.-aortic stenosis

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