

Ischemic heart disease

any imbalance between ^{by the coronaries} Supply / Demand of O_2 by myocardial

* 20% of the lumen is enough $\rightarrow$ Coronary reserve

* $\geq 70\%$ occlusion $\rightarrow$ Significant "in all coronary artery"

$\rightarrow$ except Lt main artery, proximal LAD $> 50\%$ Significant

$\rightarrow$ also carotid artery $\rightarrow > 60\%$ if asymptomatic

$\rightarrow > 50\%$ if symptomatic

Causes

I] Atherosclerosis insudation theory

the most acceptable theory while VLDL $\rightarrow$ LDL by HMG-CoA reductase

then LDL deposite in the intima of bld vessels forming plaque

IHD including all of the following

1] Sudden Cardiac death (1st manifestation)

Sudden death the death that happened within an hour in the presence of witness from the beginning of complain without trauma

Sudden C. death the death with a history of organic heart disease "HOCM" or we do autopsy shows Cardiac problems

$\downarrow$
un-explained Sudden Cardiac death "arrhythmogenic"

2] Stable angina "effort angina", "classical angina"

$\leftarrow$ وضع في صدرى بروج في كتفى لما أترج بروج، والهاجرة فيه كبيرة

3] Un stable angina

1] Angina at rest

2] Post MI

3] Progressive angina

عني كان بروج 100mg ويك 20m ويك

4] De novo angina

وضع برة بروج في ايد جف بس راج منه فترة قصيرة

اقل منه شهر

To say typical angina

- ① retrosternal chest pain
- ② radiate to hand
- ③ relieved with rest and exacerbated with effort

④ STEMI

⑤ Non STEMI

⑥ Ischemic arrhythmia → recurrent AF "recurrent palpitation"

⑦ Ischemic HF

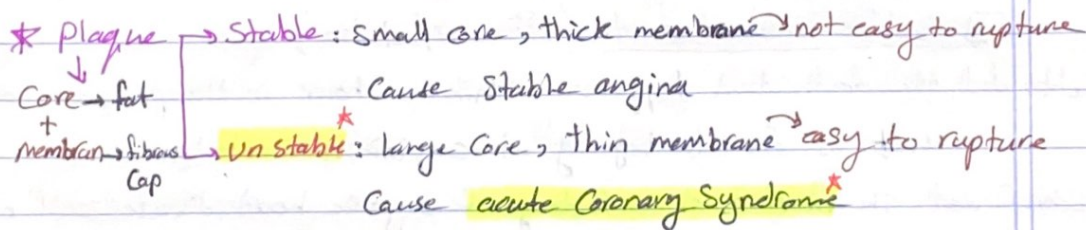
⑧ Acute Coronary Syndrome

① Unstable angina

② STEMI

③ Non STEMI

④ Sudden Cardiac death



* Endothelium of vessels is a big endocrinal gland secrete V/D or VC material so when stress cheer occurs the endothelium secretes metalloproteinases or collagenases cause rupture of plaque the platelet comes and make clot then fibrin cause thrombus so the artery closed

* If the thrombus 100% closure → STEMI

* If the thrombus not 100% closure → Non STEMI or unstable angina

Sudden Cardiac death * كلاً بالقلب يزداد

Definition

It is a temporary term including pt. presenting to emergency department with typical anginal pain, it includes STEMI, nonSTEMI, unstable angina, Sudden cardiac death

How to deal with pt? "10 min from 1st medical contact"

Don't * Time means muscle

forget * Door needle time as short as possible US: 45 min

UK: 30 min

Qatar: 10 min

1st History → ask for risk factors and family history

→ The area for cardiac pain above umbilicus below maxilla

→ any complain ↑ with effort, ↓ with rest think of cardiac causes

→ Precise, Brief history

Give aspirin if available 300 mg Chewable ^{أسبرين}

2nd ECG

3rd Basic investigations

CBC → anemia, thrombocytopenia, thrombocytosis

Chemistry → Cr, bld sugar, electrolytes

4th Cardiac ~~marker~~ Biomarkers "enzymes"

[1] Myoglobin 1st one appears during 1h lasts 24h, Sensitive most not specific

[2] Troponin the most important during 3h lasts 10 days, the most specific and sensitive / "high sensitive troponin" → ^{الأكثر دقة}

[3] CPK creatine phosphokinase during 3-6h lasts 72h

[4] LDH the last one appears during 12h lasts 14 days the least specific and Sensitive ^{الأقل دقة}

5th First aid MHA

Morphine → pain killer

Oxygen → if saturation below 90% [Stroke ~~93%~~]

Nitroglycerine → Contraindication in hypotension, Rel. v. infarction, Sildenafil ^{→ 24h قبل}

Aspirin → If not given outside

ACS ← history of stroke GI bleed bleeding

⇒ ECG

ST elevation → STEACS → STEMI

Normal or ST depression → non STEACS → STEMI or NonSTEMI
↳ cardiac enzymes

* IF the pt. STEMI → ^{→ primary PCI ~~8-10 min~~} Do Catheterisation with Clopidogrel 600mg
↳ If there is no catheterisation give Clopidogrel 300mg

→ Door balloon time
↳ 90 min if PCI available at center
↳ 120 min if PCI non available at center

PCI →
↳ here we give thrombolytic therapy Streptokinase

→ Indications for thrombolytic therapy

(1) ST elevation in 2 or more leads
↳ > 1ml in limb leads
↳ > 2 ^{→ 1.5 in female} in chest leads

(2) Lt bundle branch block + Sgarbossa criteria

→ Contraindications to give thrombolytic therapy

(1) Active non compressible bleeding ~~stroke~~ "aortic dissection"

(2) brain tumor or brain hemorrhage

(3) Ischemic stroke → ^{→ in 1st month} may become hemorrhage

(4) High pressure

(5) PVD, previous GIB

(6) pregnancy

(7) pericarditis

- Types of PCI
- ① Rescue PCI → we do it when failed thrombolytic therapy, Cardiac Shock
 - ② Pharmacoinvasive PCI → we do it when thrombolytic therapy succeeded
 - ③ Primary PCI → we do it at 1st 90 min from admission
 - ④ Elective PCI → we do it after 2-3 months
- STEMI

→ we say successful streptokinase when ST segment decreases 50% in one hour from the beginning of Streptokinase

★ If ~~normal~~ Non STEACS "normal or depression ST" we give

- ① Aspirin
- ② Clopidogrel
- ③ β -blocker
- ④ Statin
- ⑤ LMW heparin → anticoagulant
- ⑥ Nitrate in ongoing angina

We complete the management by this classification

very high risk → pt with shock or arrhythmia → PCI in 2h

high risk → pt with ↑ troponin, ongoing angina → PCI in 24h

intermediate → Stabilise

low risk → getting better → exercise test, PCI later

MI

myocardial necrosis with ↑ of troponin due to myocardial ischemia

5 Types ① Classical MI "Chest pain + ST elevation + ↑ troponin + occlusion a. in PCI"

② MINOCA myocardial infarction non obstructive coronary a.

Sepsis or MI due to ↑ troponin + "Chest pain + ST elevation + ↑ troponin + no occlusion in PCI"

③ Missed MI pt died before we do troponin test

④ Post PCI MI ↑ troponin 5 folds or more

⑤ Post CABG MI ↑ troponin 10 folds or more ⑤