

Cardio Revision Lecture

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- ACS {
Sudden cardiac death.
ST-MI
non-ST MI
unstable angina

Symptoms: Chest Pain

Investigation: ECG

T.T.T.: MONA → Morphine, O₂, Nitroglycerine

Aspirin 300 mg, Clopidogrel

600 mg

Types:

ST-elevation ASC → 100% occlusion

Treated by ① Primary PCI

② Thromolytic Therapy (streptokinase)

لو المستغنى في PCI خلال 90 دقيقة بنجاح القسطرة.

لو ما فيها [PCI non-capable] خلال 90-120 دقيقة

لو تأخر بهر necrosis تلفة القلب

الوقت بنسبة من
first medical contact.

STEMI Equivalents:

- 1- de Winter ST/T Complex.
- 2- Wellens Syndromes
- 3- ST elevation in lead AVR.
- 4- LBBB with Sgarbosa criteria.
- 5- Isolated Post. MI.
- 6- T-waves upright in V₁

Ischemic heart dz equivalent:

- 1- DM
- 2- AAA
- 3- Carotid stenosis
- 4- Rheumatoid arthritis.
- 5- PVD.

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→ life-threatening cause of chest pain:

- 1- Acute MI or ACS.
- 2- dissecting aortic aneurysm → PT. with high B.P and have pain radiated to back.
- 3- Tension pneumothorax.
- 4- Rupture Esophagus. → high amylase.
- 5- PE

T.T.T: ↓
→ decrease H.R
→ B.P by drug 1st step

→ Case about PT. have chest pain stabbing in nature and diffuse ST-elevation in all leads

DDx: 1- ASC

- 2- Acute Pericarditis.
- 3- Hypertrophic cardiomyopathy.
- 4- Brugada syndrome.
- 5- Early repolarization

→ PT. admitted to ER with chest pain, ECG → ST-elevation and subside after 5-10 minutes

stable angina ليس قسري - ليس ب ACS ليس كذلك

→ How Impact of COVID-19 on heart?

COVID-19 can cause anything - especially

[MI
Myocarditis
Arrhythmia
HF
heart attack.
PE, DVT

H.F:

Management:

Step 1 :-

ACEIs / ARBs

Beta-blocker

Step 2 :-

step 1 + spironolactone + Ivabridine (act on SA node).

Step 3 :-

+ Entresto $\begin{cases} \rightarrow \text{Valzartan (RAAS Inhibitor)} \\ \rightarrow \text{Sacubitril (Inhibit Neprilysin enzyme)} \end{cases}$

improve survival > 35%

Step 4, 5: Devices implantations.

⇒ Killip classifications

Class I : No clinical signs of H.F

Class II : Rales or crackles in the lungs, an S₃ gallop
elevated Jugular venous pressure.

Class III : Manifest acute Pulmonary edema.

Class IV : cardiogenic shock, systolic blood pressure < 90 mmHg
evidence of low cardiac output.

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Thrombolytic therapy :-

Contraindications :-

→ Absolute :

- Active non-compressible bleeding.
- Brain hemorrhage or tumor.
- Aortic dissection.

→ Relative :

- B.P ↑
- Prolonged CPR
- Pregnancy.
- active peptic ulcer
- Active hepatitis.
- Ischemic infarctions
- Previous administration of SK

لو كانت في brain فلا
Absolute بغير شك

→ Could be given within 1 week of initial dose.
→ After 1 week - 1 year → Absolute contraindications.

* Successful SK Therapy:

- 1- Relief chest pain.
- 2- Regress ST Segment $> 50\%$ within 2 hours.
- 3- Reperfusion arrhythmia
- 4- Early Peak of Cardiac enzymes.

من بداية استلام SK

⇒ Unstable angina (4) types :-

- 1- angina de novo.
- 2- Progressive angina.
- 3- Post MI
- 4- Rest

Localization of MI :

Ant. MI $\Rightarrow V_1 - V_4$

Anterior Descending branch of the left CA

Inferior $\Rightarrow II, III, aVF$

Branches of either the RT. or LT. CA

Lateral $\Rightarrow I, aVL, V_5, V_6$

Circumflex branch of the left CA

Posterior $\Rightarrow Q$ in V_6 , large R in $V_1 - 2$, Mirror test

Right CA or one of its branches

$\Rightarrow$ Mechanical complication of MI

1. Rupture of free wall
 $\rightarrow$ Cardiac tamponade
2. Rupture of Interventricular
 $\rightarrow$ harsh pansystolic murmur.
3. Rupture of Papillary muscle
 $\rightarrow$ cause pulmonary edema and mitral regurgitation (MR)
4. Pseudo aneurysm

Beck's triad $\left\{ \begin{array}{l} \text{Congested neck veins} \\ \text{Muffled heart sound} \\ \text{Hypotension.} \end{array} \right.$
of cardiac tamponade.

$\Rightarrow$ NYHA classifications of dyspnea:

Grade 1: No limitation of normal physical activity, but there is dyspnea with strenuous exercise.

Grade 2: minimal limitation of normal physical activity.

Grade 3: dyspnea of minimal effort.

Grade 4: dyspnea at Rest

Classifications of heart failure:

1. L.T side or R.T. side HF.
2. low CO or high CO
3. systolic or diastolic
4. Reduced EF $\rightarrow$ if $EF < 35\%$
Preserve EF $\rightarrow$ if $EF > 45\%$
mid range EF $\rightarrow$ if EF 35-45%

$\Rightarrow$ Basic life support

DC now is included in BLS if available
shock

This drug $\rightarrow$

now NOT include in new
guidelines in BLS, ACLS

$\rightarrow$ PT. arrest with Ventricular fibrillations
what is the type of DC shock

DC defibrillations, 360 joules.

$\rightarrow$ All arrhythmia is synchronize except: VF
give maximal Joules
Pulseless VTE

$\rightarrow$ Symptoms of aortic stenosis

3 symptoms related to life expectancy

1. chest Pain: 5 Years
2. dizziness, syncope: 3 Years.
3. dyspnea: 2 Years.

also, 4. low cardiac output symptoms

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→ Type of murmur in Mitral stenosis

- 1st heart sound accentuated
- Opening snap (after S2)
- mid diastolic murmur with presystolic accentuation.

→ Signs of valvular disease?

- Chest Pain
- Short of breath
- Lightheaded
- Fainting
- Swollen ankle

→ Dilated cardiomyopathy

Seen in Echo, dilated chambers, global hypokinesis, low EF
MR, TR

associated with thin wall Excentric if there is volume overload

→ Indications of ICD in HOCM

- Family history of sudden cardiac death.
- Family history of HOCM
- VT or VF sustained on ECG
- Marked increase in LV thickness > 25 mm.
- Systolic blood pressure not increased by exercise.

→ Types of cardiomyopathy.

Primary: without any cause

Secondary: due to cardiac cause

- Ischemic
- Valvular
- Hypertension

Causes of cardiomyopathy?

Everything.

→ Indication of surgery aortic stenosis :-

- 1- Pressure gradient > 80 or > 70 mmHg.
- 2- Valve area < 0.8
- 3- Mean Pressure gradient > 32 mmHg
- 4- Severe symptoms
- 5- Patient going for other surgery

aortic pressure : 120 mmHg

Indications of surgery in MS

- Valve area < 1.5
- Pressure gradient > 20
- mean pressure gradient > 12
- severe symptoms
- Patient going to other surgery

→ Biomarkers in HF → BNP if normal exclude HF.

BNP normal is elevated → HF
BNP has high negative Predictive value.

→ Biomarkers in MI

- Myoglobin → most sensitive

أول واحد يرتفع

- Troponin → most specific

CPK: Creatine phosphokinase

CK-MB / specific (troponin أفضل)

- AST

- LDH → least specific & sensitive

→ In new guidelines of HF, every patient should give 4 drugs: include

- Dapagliflozin which is SGLT2 Inhibitor
- B-blocker
- ACEIs

→ Causes of QT Prolongation:

- Antiarrhythmics (Amiodarone).
- Antibiotics (Macrolides, Fluoroquinolones, Aminoglycosides).
- Diuretics
- Antidepressants (SSRIs, TCAs)
- Anticholinergics (Haloperidol, Risperidone)
- Antiemetic (ondansetron)