CHRONICLES OF
CARDIOLOGY

MODULE 1

Digital Certificate CME Program on

Cardiology Differentials in General Practice

- Acute onset chest pain in a middle-aged woman
- A 57-year-old male with post-mi heart failure

MEDICINE
UPDATE

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CASE 1

Acute onset chest pain in a middle-aged woman

History

A 55-year-old woman with complaint of acute chest pain.

Chest pain was; and started about 30 minutes after she had delivered her first lecture at a public meeting.

Pain was stabbing in nature, more severe on the left side of chest, and radiating down towards the left arm.

Pain severity: 8 out of 10.

Past Medical History

Past medical history: Non-significant

No history of any substance abuse.

Family history: positive for acute myocardial infarction (AMI) and hypertension.

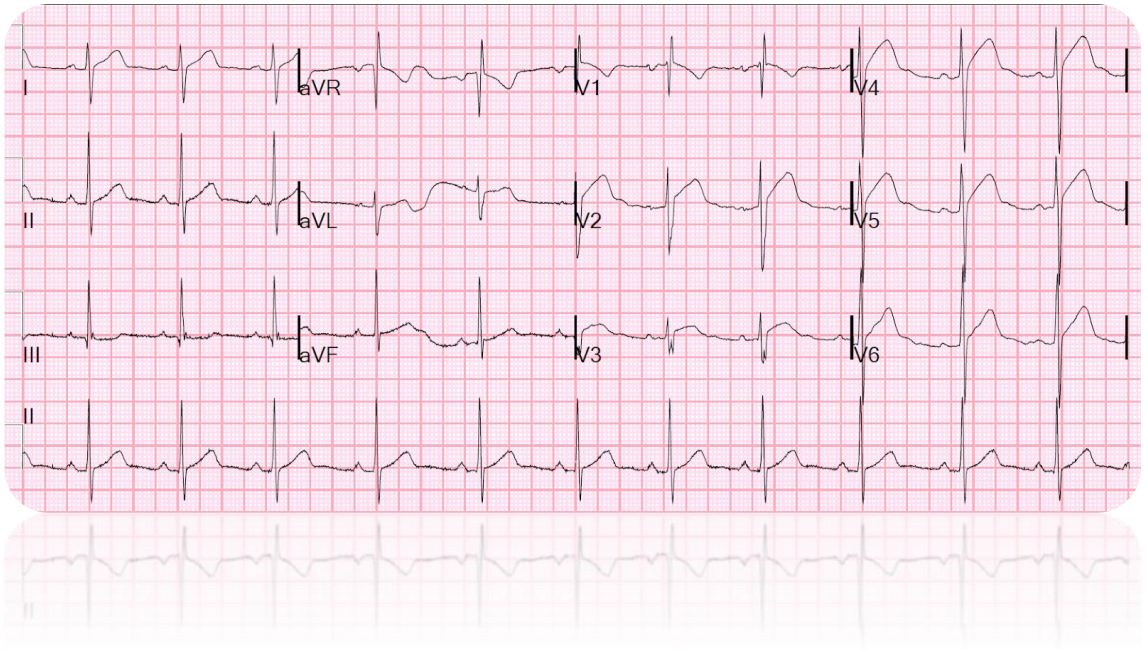
Currently receiving no medications; except for calcium & vitamin D supplementation.

Examination

- She was afebrile & well-oriented.
- Vitals: BP, 134/92 mm Hg; PR, 78 beats/min, regular; RR, 16/min; oxygen saturation, 99%; JVP, not raised.
- No cyanosis or peripheral edema.
- Chest auscultation: Clear lung fields.

Investigation

- ECG: ST elevations in precordial leads
- Raised serum creatine phosphokinase (CPK), 178 IU/L; Troponin I, 4.55 mg/L
- CBC; LFTs: wnl
- Lipid profile: Total cholesterol, 248 mg/dL; LDL-cholesterol, 146 mg/dL
- D-dimer test, negative.



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Management

Being at risk for IHD, she was admitted to the coronary care unit (CCU)

Started on oral aspirin 300 mg and clopidogrel 300 mg; and enoxaparin 70 mg subcutaneously.

Cardiac catheterization excluded significant coronary stenoses.

Left ventriculogram revealed hyperkinesia at the base and dyskinesia at large apical region of the left ventricle.

Transthoracic echocardiography revealed normal atrium, and right ventricle.

Heart valves were also normal.

However, left ventricle had a dilated akinetic apex and hypokinetic apical septum.

Overall, LVEF was 45%.

Management

She was diagnosed as a case of takotsubo cardiomyopathy.

She remained hospitalized for 7 days.

Initial treatment included aspirin, clopidogrel, and enoxaparin.

Anticoagulant therapy was discontinued later after excluding significant coronary stenoses.

She recovered in CCU, and was discharged home on the 9th day in a stable condition with following regimen:

Labetalol 100 mg BD, lisinopril 10 mg, atorvastatin 20 mg daily

Follow-up at one month

Asymptomatic; Echocardiography showed improved left ventricular function and ejection fraction.

Quiz

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Which of the following is the most likely cause of chest pain in a patient presenting to the emergency department:

- Musculoskeletal causes
- Acute coronary syndrome
- Gastrointestinal reflux disease

Quiz

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All of the following are modifiable risk factors for cardiac disease, except:

- Physical inactivity
- Family history of cardiac disease
- Smoking

Quiz

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Which of the following investigative feature would help in confirming a diagnosis of takotsubo cardiomyopathy, in a patient with acute chest pain?

- Coronary artery obstruction
- Hypo-contractile heart base
- Hypokinesis of left ventricle and ballooning of the heart apex

CASE 2

A 57-year-old male with post-MI heart failure

History

A 57-year-old male with sudden-onset severe substernal chest pain, stabbing in nature with profuse sweating.

Pain was radiating to his left shoulder and arm.

Past history: Hypertension for 7 years.

Suffered similar episode of chest pain about 2 years back, which reportedly improved with antacids.

He was not very compliant with his medication.

Examination

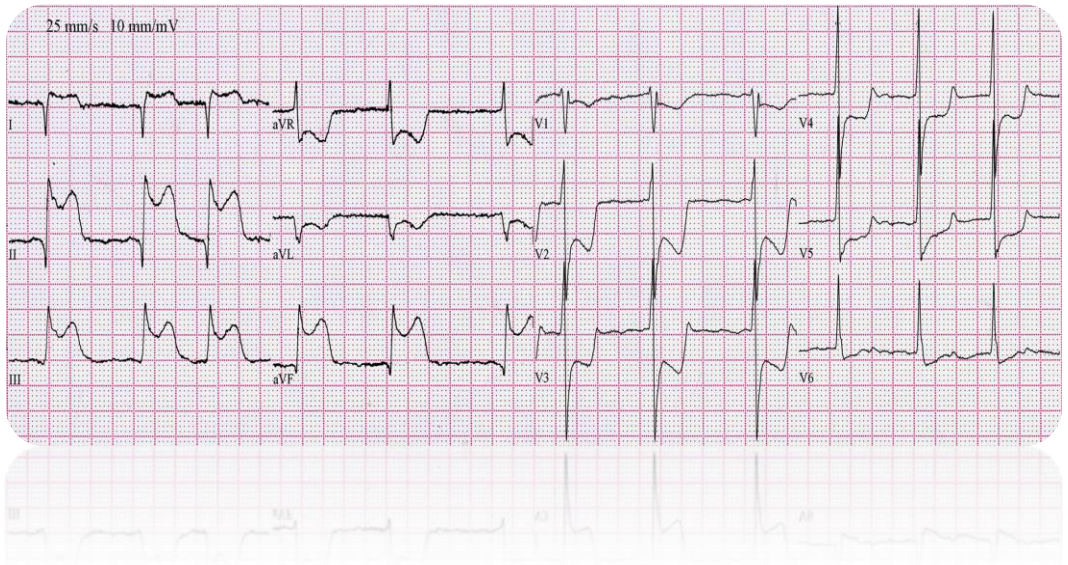
He appeared conscious and extremely anxious.

Vitals: BP, 122/84 mmHg; PR, 82 beats/min (good volume pulse); RR, 18 breaths/min; SpO2, 96%.

Cardiac auscultation: normal S1 and S2; no S3 or gallop rhythm; no heart murmur.

Investigation

- CPK-MB – 6.2 ng/ml
- Trop-T test – Positive
- Normal blood counts
- Total cholesterol – 220 mg/dL, HDL / LDL / VLDL – 38 / 160 / 46 mg/dL, Triglycerides – 224 mg/dL
- Creatinine – 0.9 mg/dL
- Na+/K+/Cl– – 138/4.2/101 meq/L
- 12-lead ECG: revealed findings consistent with inferior wall MI with raised CPK-MB and positive Trop-T test.



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Management

He was started on aspirin, clopidogrel, metoprolol, atorvastatin, ramipril and thrombolytic therapy with streptokinase.

He underwent angiography and revascularization successfully, and was shifted to the coronary care unit (CCU).

On 2nd day, he developed breathlessness.

Examination revealed presence of an S3 gallop rhythm, and bilateral basal crepitations in the lungs.

Echocardiography showed an ejection fraction of 34%.

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Management

Diagnosed as having post-MI heart failure.

His electrolytes and renal function were within normal limits.

Eplerenone 25 mg/day was added in the therapeutic regimen.

He started showing improvement by the 9th day post-procedure.

As he was tolerating eplerenone well, the dose of eplerenone was increased to 50 mg/day.

Gradually, he improved and on 15th day post-procedure, he was discharged on following regimen:

Aspirin, clopidogrel, metoprolol, atorvastatin, ramipril and eplerenone.

Management

Repeat ECHO after 4 weeks revealed improvement in LVEF to 44%.

He was asymptomatic at this time with normal serum potassium levels 4.3 meq/L.

Other renal parameters were also normal.

All medications were continued.

A repeat follow-up visit was planned after another 4 weeks.

However, he was subsequently lost to follow-up.

Quiz

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Which of the following factor is least likely to be related to the appearance of heart failure after MI during hospital stay?

- Myocardial stunning
- Preexistent comorbidities
- Ventricular remodeling

Quiz

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Which of the following LVEF value suggests a diagnosis of heart failure with reduced ejection fraction (HFrEF)?

- 41-49%
- ≤40%
- ≤60%

Quiz

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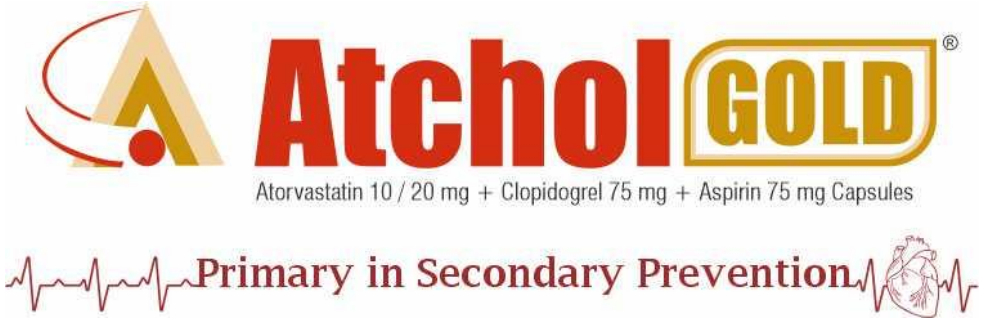
Use of statins in heart failure would be better justified in which of the following scenario?

- Heart failure due to hypertrophic cardiomyopathy
- Heart failure due to uncontrolled hypertension
- Heart failure of atherosclerotic origin

Thank you for participating in Module 1

Module 2 coming soon…



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