BEDSIDE ASSESSMENT OF PATIENTS WITH STEMI

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Presenter Disclosures

- There are no conflicts/ grants/ disclosures for this presentation.
Ecocardiographic assessment

- Positive diagnosis
- Differential diagnosis
- Hemodynamic assessment
- Reperfusion treatment efficacy
- Complications
1. Reduced coronary flow
2. Perfusion heterogeneity
3. Metabolic impairment
4. Abnormal wall motion
   Diastolic dysfunction
5. ECG changes
6. Pain
7. Myocardial injury markers
8. Necrosis

Sb=80-90% ; Sp=80-90% for nontransmural MI
Sb=90-95% ; Sp=89% for transmural MI
New definition of AMI

Detection of rise and/or fall cardiac biomarkers (preferably troponin) with at least one value above the 99th percentile of the upper reference limit together with evidence of ischemia with at least one of the following:

- Symptoms of ischemia
- ECG changes of new ischemia (new ST-T changes or new LBBB)
- Development of pathological Q waves in the ECG
- Imaging evidence of new loss of viable myocardium or new regional wall motion abnormality
Ecocardiographic assessment

- Positive diagnosis
- **Differential diagnosis**
- Hemodynamic assessment
- Reperfusion treatment efficacy
- Complications
- Apex and anterior wall
- Abnormal LV geometry
- Loss of thickness
- Dissynchronism

- No apex and anterior wall
- Normal geometry
- Multiphasis contraction
- Dissynchronism +
Aortic dissection
Pulmonary embolism
Myopericarditis


Ecocardiographic assessment

- Positive diagnosis
- Differential diagnosis
- Hemodynamic assessment
- Reperfusion treatment efficacy
- Complications
Hemodynamic assessment

- LVD and LVS volumes
- Left ventricular ejection fraction
- Diastolic transmitral inflow and left atrium intracapillary pressure
- Cardiac output
- Right ventricular function
Hemodynamic assessment

LVEF
Hemodynamic assessment
Hemodynamic assessment
E/E´ rate

Ecocardiographic assessment

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Ventricular remodeling
Intracavitary thrombosis
Ischaemic mitral regurgitation
Prognosis in Ischemic MR
Quantitative Echocardiography

Mayo Clinic 303 pts with AMI & IMR vs 191 pts with AMI no IMR 5 y mortality
ERO > 20mm² - risc 2,23 (p<0.003)  ERO < 20mm² - risc 1,65 (p<0.049)

Grigioni &c Circ 2001 103
Pericardial effusion
Mechanical complications
Rupture of IVS
Mechanical complications
Rupture of papillary muscle
Mechanical complications
Rupture of free wall
Conclusions

- Echocardiography is a safe and easy to perform non-invasive method for patients with STEMI, to be used at bedside.

- Echocardiography represents a very important diagnostic tool in difficult cases.

- All patients with acute myocardial infarction must be evaluated by echocardiography for hemodynamic and complications’ assessment.