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Coronary angiography and indications for CABG or angioplasty

EBMG
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Contents

Aims

- To determine the extent of anatomic coronary artery obstruction when coronary artery bypass grafting (CABG) (Level of Evidence=A; Evidence Summary available on the EBM web site) or percutaneous transluminal coronary angioplasty (PTCA) (Level of Evidence=A; Evidence Summary available on the EBM web site) is considered.
- To solve difficult diagnostic problems; unstable angina, survivors of sudden death, atypical pain.

Indications in patients with angina pectoris (AP)

- Severe stable AP resistant to medication
- Occlusion of left anterior descending artery (LAD) or a 3-vessel disease is suspected on the basis of an exercise tolerance test (also when the symptoms are mild)
    - Ischaemic ST (> 2 mm) with minimal load and low heart rate.
    - Deficient rise in BP during exercise test.
- AP after acute myocardial infarction
    - Pain at rest or when walking while the patient is still in the hospital.
    - AP and severe heart failure (myocardial stunning).
    - ST-depression during exercise outside the infarction area.
- Unstable AP resistant to medication.
- AP following PTCA.
- In cases of radidly recurring AP after CABG, PTCA may be considered.

Indications in patients without AP

- Angiography may be indicated or considered:
  - in patients accepted for heart surgery (e.g. valve prosthesis)
  - in survivors of ventricular fibrillation without MI
  - when the exercise ECG is clearly pathological
  - In acute pulmonary oedema without cause.
  - When ECG after a T-wave infarction (non-Q-wave infarction) shows long lasting and wide T inversions in anterior wall leads. In the USA, angiography and revascularization are performed almost routinely on patients with a non-Q-wave infarction irrespective of the patient´s subjective condition.
  - As a differential diagnostic method in special situations: LBBB and LVH disturb the interpretation of exercise test.

Management of acute imminent myocardial damage

- Acute PTCA may be an alternative to thrombolysis (Level of Evidence=B; Evidence Summary available on the EBM web site) when the latter is contraindicated because of the risk of bleeding or shows no effect.

Related evidence

- Patients with moderate to severe left ventricular systolic dysfunction and concomitant limiting angina have improved survival and physical functioning after CABG (Level of Evidence=C; Evidence Summary available on the EBM web site)
- The medium and long-term outcomes after balloon angioplasty are favourable with a low mortality and myocardial infarction rate and a low rate of later restenosis (after 6 months) (Level of Evidence=C; Evidence Summary available on the EBM web site)
- PTCA may lead to greater reduction in angina, but there is no evidence of improved survival or reduction in the subsequent need for revascularization, although trends do not favour angioplasty (Level of Evidence=C; Evidence Summary available on the EBM web site)
- In patients undergoing percutaneous revascularization, platelet glycoprotein IIb/IIIa receptor antagonists reduce death, myocardial infarction and need for urgent reintervention (Level of Evidence=A; Evidence Summary available on the EBM web site)
- Ticlodipine plus aspirin is more effective than oral anticoagulation in preventing coronary events in patients undergoing coronary stenting (Level of Evidence=A; Evidence Summary available on the EBM web site)

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