indications for adult cardiac surgery
created by Paul Young 14/10/07

general:
- the aim of surgery is to eliminate symptoms & prolong life so the indications should be based on:
  (i) symptoms
  (ii) left ventricular function
  (iii) area of ischaemia
  (iv) anatomic localisation of coronary artery stenosis

specific anatomical coronary lesions:
(i) left main stenosis of >50% or a left main equivalent (>70% stenosis in the proximal LAD & proximal Cx arteries)
(ii) triple vessel disease with >70% lesions in all 3 coronary territories
(iii) significant proximal LAD stenosis with 2 vessel disease
NB: long term survival benefit is even greater when LV function is depressed before surgery

trials:
- in the early 1990s, three large multicentre randomised trials were undertaken in Europe & the United States: the Veterans Administration Cooperative Study, the European Coronary Surgery Study and the Coronary Artery Surgery Study which all demonstrated a significant benefit for CABG over medical treatment
- since these trials several important factors have changed:
  (i) patients are older (patients >65 were excluded)
  (ii) surgical techniques have improved with use of arterial grafts
  (iii) new medical therapies such as statins have been shown to prolong life after CABG

predicted surgical risk:
- risk factors that increase perioperative mortality include:
  (i) increased age
  (ii) diabetes mellitus
  (iii) COPD
  (iv) renal failure
  (v) previous surgery
  (vi) left ventricular dysfunction
  (vii) pulmonary hypertension
  (viii) emergency operation
- risk can be predicted with the Euroscore (www.euroscore.org)

aortic stenosis:
(i) symptomatic aortic stenosis (unless comorbidities preclude it)
- surgery is the only effective therapy for symptomatic AS
(ii) mild to moderate aortic stenosis undergoing CABG
- aortic stenosis is graded based on echocardiography criteria
  mild (effective valve area of >1.5cm²)
  moderate (effective valve area of >1-1.5cm²)
  severe (effective valve area of <1cm²)

aortic regurgitation:
(i) NYHA class III or IV symptoms due to AR
(ii) LVEF <25% or end systolic dimension >60mm or both
(iii) LVEF 25-49% may be an indication (controversial)
(iv) AR associated with aortic root dilatation of >50mm

mitral stenosis:
(i) moderate or severe mitral stenosis (mitral valve area <1.5cm²) in symptomatic patients (NYHA III or IV)

mitral regurgitation:
(i) symptomatic mitral regurgitation
(ii) asymptomatic patients with mild or moderate LV dysfunction
(iii) acute onset of atrial fibrillation due to MR
- ischaemic MR may improve with revascularisation

mitral valve surgery

Coronary artery disease:

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