

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 $>1.5\text{cm}^2$)
 - moderate (effective valve area of $>1-1.5\text{cm}^2$)
 - severe (effective valve area of $<1\text{cm}^2$)

aortic regurgitation:

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

mitral stenosis:

- (i) moderate or severe mitral stenosis (mitral valve area $<1.5\text{cm}^2$)
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

aortic
valve
surgery

mitral
valve
surgery

indications
for adult
cardiac
surgery
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coronary
artery
disease

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)