

Valvular Heart Disease 2011

Dr Jason Kaplan, Sydney Cardiology

jason.kaplan@sydneycardiology.com.au

Colour Doppler Echocardiography done accurately is the key to making important decisions about valve lesions.

Etiologies

Aortic stenosis

- Severe* if late peaking murmur, paradoxically split S2, S4; critical stenosis = valve area < 0.8 cm²,
- Congenital (bicuspid)
- Degenerative (calcific stenosis)
- Rheumatic heart disease (also see aortic regurgitation)

Mitral regurgitation

- Infective endocarditis
- Ischemic heart disease
- Myxomatous degeneration (common)
- Collagen vascular disease
- Spontaneous chordae rupture
- Rheumatic fever

Aortic regurgitation

- Annuloaortic ectasia (also known as idiopathic dilation of the aortic root; often associated with hypertension and aging)
- Aortic dissection
- Marfan's syndrome
- Rheumatic fever
- Infective endocarditis
- Collagen vascular disease
- Syphilitic aortitis

Mitral stenosis

- Severe* if S2-Opening Snap interval short (S2-OS interval is proportional to MV area) and MV area < 1.0 cm²; MV gradient 1-6 mm Hg (mild); 6-12 mm Hg (moderate); > 12 mm Hg (severe)
- Rheumatic heart disease is major cause

Treatment

Aortic stenosis

- Medical tx
- Diuresis* (careful) if CHF and consider surgery
- Avoid* vasodilators and negative inotropes (e.g. beta blockers or calcium channel blockers in severe aortic stenosis)

Surgical repair is best ? Percutaneous Valve in future

- Indicated in patients with symptoms or significant left ventricular dysfunction
- Balloon aortic valvuloplasty -Associated with high complication rate (> 10%)
- May be considered as a bridge to surgical therapy or a palliative measure in selected situations

Mitral regurgitation

- Medical tx:
- Decrease* afterload (e.g. ACEI, hydralazine, nitrates, amlodipine)
- Decrease* preload (diuretics)
- Monitoring*: increase frequency of TTE screening when EF < 65% and LVIDs > 40
- Surgical repair**- consider if:
- Symptomatic
- EF < 60% or end systolic diameter > 45 mm
- Atrial fibrillation
- Substantial pulmonary hypertension

Aortic regurgitation

- Medical tx
- Decrease* afterload (nifedipine/amlodipine, ACEI, hydralazine)
- Surgical repair—consider if:
- 1) EF < 55%
- 2) End systolic diameter > 55 mm

Mitral stenosis

- Medical tx
- Na restriction, cautious diuresis, beta-blockers, anticoagulation (because of concurrent atrial fibrillation)
- Percutaneous mitral valvuloplasty: consider if:
 - 1) Echo favourable valve features
 - 2) Mild MR
 - 3) No AF or LA thrombus
- Surgical tx**: consider if :
 - 1) Symptomatic
 - 2) Pulmonary hypertension
 - 3) AF

Pearls

- Aortic stenosis prognosis: 50% mortality at:
 - 5 yrs after onset of angina
 - 3 yrs after onset of syncope
 - 2 yrs after onset of CHF (AS-induced hypertrophic cardiomyopathy progresses to dilated cardiomyopathy)
- Mitral regurgitation prognosis
 - If asymptomatic, 80% 5 yr survival with meds
 - If symptomatic, 45% 5 yr survival with meds