Valvular Heart Disease

Guidance for follow up and management

Intensity of follow up of valve pathology is dependent on symptoms and echocardiographic features. Patients who become symptomatic need rapid clinic assessment.

Stockport NHS Foundation Trust

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**LEFT SIDED HEART VALVE DISEASE**

**Aortic stenosis**

In the setting of ***impaired LV function***, the severity of aortic stenosis can be underestimated (based on low gradients in a low flow state) or overestimated (based on low valve area, as in pseudo-severe aortic stenosis). The cause of LV impairment and degree of valve stenosis should be clarified before enrolment in a routine follow up programme.

1. **Mild/sclerosis** (no gradient):
* Usually no follow up necessary (depending on age of patient)
* Discuss with consultant with a view to discharge
* Open access echocardiography to be organised via GP in 5 years’ time
* Note valve morphology: ***bicuspid aortic valve*** patients need long term monitoring even if valve haemodynamically normal (repeat echo in 2-5 years depending on aortic root size)
1. **Moderate** (peak velocity < 4 m/sec, mean gradient < 40 mmHg, valve area 1-1.5 cm2)
* If asymptomatic: follow up at 12 months with echo
* Patients should be advised to promptly report the development of exertional chest pain, dyspnoea, light-headedness or syncope. If such symptoms occur rapid re-evaluation is required with repeat echo, possibly TOE, and cardiac catheterisation - discuss with consultant
1. **Severe** (peak velocity > 4 m/sec, mean gradient > 40 mmHg, valve area < 1 cm2)
* If asymptomatic: follow up at 6 months with echo
* Risk stratification with BNP level check and ETT (doctor supervised) may be useful in asymptomatic patients to objectively evaluate effort tolerance and BP response on exertion
* If asymptomatic but peak velocity > 5 m/sec (peak gradient > 100 mmHg), consider early surgical work up in view of likelihood of rapid deterioration
* If symptomatic: initiate urgent surgical work up

**Aortic regurgitation**

1. **Mild**
* Often no follow up necessary - discuss with consultant with a view to discharge
* If under follow up and has been stable over a period of time - consider discharge
* Open access echocardiography can be organised via GP in 2-3 years’ time
* NB: patients with a ***bicuspid aortic valve*** - as above (if ***aortic root dilatation*** is present > 4cm, consider further evaluation with CMR aorta)
1. **Moderate**
* Repeat echo in 12 months
* Note aortic root size
1. **Severe**
* If asymptomatic: review with repeat echo in 6 months
* Optimal BP control (ACE-inhibitor/ ARB)
* If symptomatic or ***LV dilatation*** on echo (end systolic diameter > 4cm): initiate surgical work up

**Mitral stenosis**

1. **Mild** (mitral valve area > 1.5 cm2, mean pressure gradient < 5 mmHg, PHT 70-140 msec)
* Repeat echo in 12-18 months
* Due to local tendency for over-reporting this, review echo prior to enrolling into follow up programme
* If stable over a period of time consider discharge (depending on aetiology of mitral stenosis and patient’s age)
1. **Moderate** (MVA 1-1.5 cm2, mean PG 5-10 mmHg, PHT 140-220 msec)
* If asymptomatic: repeat echo in 6-12 months
* Evaluate need for anticoagulation: PAF/ AF (repeat routine ECG and Holter monitor), significant LA dilatation, spontaneous echo contrast
* Monitor PA pressure: consider interventional work up if resting PA pressure > 50 mmHg
* Counsel young female patients regarding risk of decompensation if pregnancy contemplated
* If symptomatic: arrange TOE with a view to assessment for suitability for percutaneous valvotomy

**Mitral regurgitation**

It is important to ascertain the aetiology of mitral regurgitation prior to enrolling into a routine follow up programme (functional versus structural mitral valve disease). The following recommendations are valid predominantly for patients with structural MV disease.

 **1. Mild**

* Usually no follow up required
* Note valve morphology: patients with ***mitral valve prolapse / cleft mitral valve*** would require long term surveillance (review echo with consultant to confirm diagnosis, then repeat echo in 2 years’ time)

**2. Moderate**

* Repeat echo in 12 - 18 months
* If symptomatic: review echo with consultant - consider TOE and/ or exercise stress echo to assess degree of MR and PA pressure with exertion

**3. Severe**

* If asymptomatic: repeat echo in 6 months
* Monitor for LV dilatation (end systolic diameter > 4cm), drop in EF < 60%, pulmonary hypertension with resting PA pressure > 50 mmHg
* Assess rhythm - monitor for PAF (onset of AF is an indication for consideration of surgery)
* Consider earlier surgical referral if valve is ***repairable*** (note valve morphology, discuss TOE assessment)
* If symptomatic: prompt surgical work up, including TOE to assess valve repairability

**RIGHT SIDED HEART VALVE DISEASE**

Mild to moderate tricuspid and pulmonary regurgitation are often physiological or related to left sided cardiac pathology – in those cases no specific follow up for the tricuspid and pulmonary valve is required. Patients with an otherwise normal heart can be discharged.

Follow up is recommended for cases of primary/ structural pulmonary and tricuspid valve disease – such as in Ebstein’s anomaly and other congenital heart disease, or acquired right heart valve pathology such as in carcinoid syndrome or post operatively (eg. Ross procedure) – discuss with consultant regarding the required interval follow up (usually at 12 months with clinical review and repeat echocardiogram).

**PATIENTS POST VALVE REPAIR/ REPLACEMENT**

Ensure ***baseline post-operative echo*** has been performed in all cases post valve repair/ replacement within 3-6 months after surgery. Thereafter:

1. **Mechanical prosthetic valves**
* Review every 12 months – repeat echo ***only*** if change in symptoms or clinical signs
1. **Bioprosthetic valves**
* Review every 12 months – repeat echo after ***5 years for mitral*** and ***7 years for aortic*** bioprosthesis, then annually
1. **Homograft/Autograft**
* Review every 12 months – repeat echo after ***5 years for mitral*** and ***7 years for aortic*** prosthesis, then annually
1. **Mitral valve repair**
* Review with repeat echo every 12 months

**THE ‘ONE STOP’ SONOGRAPHER-LED VALVE SURVEILLANCE CLINIC**

This is currently in development.

Evaluate if patients are suitable for this programme based on the following criteria. Forward referral with information from latest clinical assessment to Dr R Panayotova for triage.

**Inclusion criteria:**

1. Asymptomatic patients with mild, moderate or moderate to severe valve disease who have no other significant cardiac comorbidity requiring clinical follow up
2. Patients with congenital/ genetic conditions requiring imaging valve and/or aortic root follow up – such as Marfan’s syndrome, Ehlers Danlos syndrome
3. All patients need to have been previously seen and assessed by a cardiologist and deemed suitable for follow up by the surveillance programme

**Exclusion criteria:**

1. Severe valve disease (formal medical review in clinic preferred)
2. Significant cardiac comorbidity which requires regular clinic review
3. The presence of symptoms

**REFERENCES AND FURTHER READING**

* + - 1. 2014 AHA/ACC Guideline for the Management of Patients With Valvular Heart Disease. *JACC* 2014, doi:10.1016/j.jacc.2014.02.536
			2. Guidelines on the management of valvular heart disease (version 2012). *European Heart Journal* 2012;33,2451–2496
			3. Specialist valve clinics: recommendations from the British Heart Valve Society working group on improving quality in the delivery of care for patients with heart valve disease. *Heart* 2013;99**:**1714-1716