Structural Interventions: an update

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What interventions are offered

• Transcatheter aortic valve implantation (TAVI) – transfemoral and transapical/transaortic
• Percutaneous balloon mitral valvuloplasty
• ASD closure
• Mitral valve-in-valve implantation (percutaneous/transapical)
• (PFO closure/Left atrial appendage occlusion)
• (Paravalvular leak closure)
What interventions are coming

• ACHD interventions
  – percutaneous pulmonary valve implantation
  – Coarctation stenting
  – VSD/PDA closure
  – Baffle stenting, other uncommon procedures

• (Native mitral valve repair/replacement)
TAVI

• Growing service, 147 cases performed in 2016
• Team of 4 Interventional Cardiologists, 1 Imaging Cardiologist, 2 Cardiac Surgeons, 1 TAVI nurse, 1 TAVI co-ordinator (1 fellow)
• 18% Transapical cases, 82% Transfemoral
• Mortality 1.6% TF, 3.7% TA in 2016
• 2/3rds Edwards, 1/3rd Acurate Neo
Minimalist TAVI

Transcatheter aortic valve implantation in 2017: state of the art

Marco Barbanti1, MD; John G. Webb2, MD; Martine Gilard3, MD; Davide Capodanno3, MD, PhD; Corrado Tamburino3, MD, PhD
Pathway

Heart Team Approach

Referral to TAVI team

Triage

Clinic and Investigations

MDT

SAVR

TAVI

OMT
TAVI referral pathway

• Referrals increasing, causing increasing pressure on the service
• Weekly TAVI clinic (consultant/fellow/nurse)
• Weekly MDT
• All patients are assessed with 6MWT, frailty assessment (+/- MMSE) in clinic
Refer early

- ESC guidelines
- ETT
Patient Selection

Heart Team Approach

Cardiologist / surgeon
Independence
Co-morbidities
Survival > 1 yr
Annulus
Vascular access

High-surgical risk (STS or Euroscore)

Patient suitability

Anatomical suitability

SAVR
TAVI
Medical therapy

Geriatrician / rehabilitation
Quality of Life
Frailty
MGA
Patient Selection

TAVI or No TAVI: identifying patients unlikely to benefit from transcatheter aortic valve implantation

Rishi Puri¹,²,³, Bernard June⁴,⁵, David J. Cohen⁶, and Josep Rodés-Cabau¹,*
Who should not be referred

- Anything more than very mild dementia – must know what their condition is, why they have been referred and be able to consent for the procedure
- Moderate or severe right ventricular dysfunction with pulmonary hypertention (high risk of death)
- Significant lung disease: Severe COPD on home oxygen, patients who desaturate on exertion (unlikely to benefit)
- Community DNAR order in place

- Patient who previously refused intervention – we have a policy of telling them it is now or never if we feel they should have intervention
Investigations required

- Echocardiogram
- Coronary angiogram required if angina (please get adequate pictures or may needed to be repeated – 5F often inadequate, 30-50% CAD present) – if no angina, can avoid angiogram in many cases based on CT scan
- Pulmonary function tests if known COPD
- (CT)
Mitral valvuloplasty

• PBMV/PTMC referrals to be sent to SKA (taken over from Dr Perry)
• All cases now discussed in mitral MDT
• Need TTE and often TOE
• Currently procedures done under GA with TOE guidance for optimal outcomes
PFO/LAAO

• Currently not commissioned by NHS England
• PFOs should only be referred if very large (effectively ASDs) and with history of stroke (not TIA)
• LAAO – cases can be referred to Dhiraj Gupta but patient currently has to fund device
Paravalvular leaks closure

- Mitral and aortic paravalvular leaks
- Mechanical, bioprosthetic or TAVI valves
- Haemodynamic compromise due to paravalvular regurgitation
- Ongoing haemolysis (harder to treat)
- No active endocarditis/dehiscing prostheses
- Referrals to structural team for MDT discussion
Valve-in-valve referral

- Bioprosthetic valve failure (stenosis or regurgitation) – any position
- Can be either stented or stentless valves
- Also patients with complete rings used for repair (mitral/tricuspid), possibly severe MAC in native valves
- Refer to TAVI team for aortic valves
- Refer to SKA/structural team for mitral/tricuspid valves
- Not if active endocarditis
ACHD interventions

• ACHD services will be starting in Liverpool soon
• Intervention will be in conjunction with Paediatric Cardiologists from Alder Hey
• ASD referrals should be sent to LHCH intervention directly
• Other ACHD cases to the ACHD team
Mitral/Tricuspid devices
Mitral valve leaflet tear repair

- 55 year-old male
- Mechanical AVR for severe AR October 2012
- Increasing SOB
- Tear in base of anterior mitral valve leaflet noted, causing severe MR – likely related to suture at time of AVR
- Re-do surgery difficult, particularly due to radiation for Hodgkin’s lymphoma
Multiple ASD closure

• 75 year-old male
• Flutter ablation May 2017
• Noted on TOE to have ASD then
• CMR showed multiple ASDs, aneurysmal IAS, shunt 1.7:1
Summary

• TAVI continues to expand
• Referrals need to be more judicious
• Patient selection is key to success
• Other structural interventions are here at LHCH – please refer cases
• ACHD intervention (except ASD closure) the new kid on the block – will expand our work further
Discussion