

The peak longitudinal strain in patients correlated with the RV end diastolic volume index ($r=0.38$, $p 0.03$), RV end systolic volume index ($r=0.52$, $p 0.002$), RV EF ($r=0.535$, $p 0.002$) and RV mass index ($r=0.43$, $p 0.01$). The mid RV circumferential strain only correlated with RV EF ($r=0.40$, $p 0.02$) and no other remodelling parameters.

Discussion RV longitudinal strain was reduced in patients with a systemic RV irrespective of whether the ventricular configuration was single or dual. No difference was seen between the single circulation systemic RV compared to the dual circulation systemic RV, suggesting that RV remodelling is mostly in response to the systemic position rather than the ventricular configuration. Longitudinal studies will be required to assess the utility of the longitudinal strain in the prediction of outcomes in the follow up of these patients.

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AN ASSESSMENT OF THE PERFORMANCE OF THREE BIOLOGICAL TRICUSPID VALVE REPLACEMENTS IN PATIENTS WITH CONGENITAL HEART DISEASE

Thomas Fleck, Paul Clift*. *Queen Elizabeth Hospital*

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Objective To assess the performance of three Biological Tricuspid Valve replacements (St Jude Epic, Perimount and Hancock) in congenital heart disease patients. Currently, there is little comparative data on the long term performance of these biological tricuspid valve replacements.

Methods We audited the performance of the valve replacements in all the patients with Congenital Heart Disease ($n=50$) who had Biological Tricuspid Valve replacements in the Queen Elizabeth Hospital, Birmingham, from 2000 to present. For each patient, we collected echocardiogram data at baseline (the first data available after their surgery) and at their most recent review. Valve performance was assessed according to criteria set out by the American Society of Echocardiology (ASE) in terms of valve stenosis and regurgitation. We also looked at patient-reported symptoms before surgery and at most recent review.

Valve was Stenosed if one or more of the following was met: Mean gradient 6 mmHg; Peak velocity >1.7 m/s; Pressure half time >230 ms.

Valve was Regurgitant if the following was met: Tricuspid regurgitation $>$ Mild regurgitation on report.

Patient Declined symptomatically if one or more of the following was met: NYHA class unchanged or worsened; new arrhythmia post-op; decrease in measured peak VO_2 . All mortalities that occurred during follow-up were recorded. These patients were not included in the analysis.

Results Only two Hancock valves had been used since 2000, which was too few to be able to draw any reliable conclusions. Table 1 presents background data for the other two valves; Table 2 presents the comparison of their performance. Proportionately fewer Perimount valves became stenosed or regurgitant than the St Jude Epic valves. St Jude Epic valves were associated with improved peak VO_2 , however average NYHA class reduction (improvement) was greater in those with the Perimount. This may reflect the case mix in this small number of patients.

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	Perimount Valve	St Jude Epic Valve
No. of operations performed	16	27
No. of survivors	13	24
Average follow-up (years)	3.49	3.00
Total patient-years of follow-up	41.9	68.9

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	Perimount Valve	St Jude Epic Valve
Percentage 'stenosed' at baseline	0.0	8.7
Percentage 'stenosed' at follow-up	11.1	22.2
Percentage difference	11.1	13.5
Percentage 'regurgitant' at baseline	9.1	0.0
Percentage 'regurgitant' at follow-up	23.1	21.7
Percentage difference	14.0	21.7
Percentage 'declined symptomatically'	46.2	37.5
Average NYHA class change	-1.31	-0.91
Average VO_2 max change	-8.6	5.43

Discussion and conclusion Tricuspid valve replacement is rarely performed and the choice of which valve to use is not assisted by any published data. This audit suggests that the Perimount valve in the tricuspid position has a marginally better echo profile than the St Jude Epic valve over a three year follow up. The cohort is too small to make recommendations on which valve to use, but has highlighted a relatively high early attrition rate in terms of bioprosthetic valve function in the tricuspid position.

Therefore we propose that valve surveillance is carried out annually for these valves and that valve dysfunction merits further investigation. We propose to perform CT evaluation of dysfunctional bioprosthetic valves for evidence of thrombus and this will be prospectively audited.

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POST OPERATIVE COMPLICATIONS IN ADULT CONGENITAL HEART DISEASE

Emma Pick, Jo Quirk*, Jo Birkett, Damien Cullington, James Oliver, Stefano Congiu, Osama Jaber, Carin Van Doorn, Kate English. *Leeds Teaching Hospitals Trust*

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Introduction Increasing numbers of adults with congenital heart disease (ACHD) are undergoing redo or primary surgical procedures. There is little available data relating to post-operative mortality and morbidity in this group.

Methods We examined 99 consecutive ACHD patients who underwent cardiac surgery in our institution over twelve months from April 2015. Data collected included age, body mass index (BMI), type of procedure, whether the procedure was a primary procedure or a redo, length of stay and the occurrence of any complications. Complications were classified as requiring intervention or self-limiting. Whether complications had permanent long term sequelae or not was assessed.

Results Patients were aged between 16 and 69 years. 41 patients underwent a primary procedure, and there were 58 redo operations. 19 different primary procedures were