Tricuspid Valve Repair for Tricuspid Annular Dilatation shows benefit

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A randomised trial from Rome recently reported improved cardiac and functional outcomes when tricuspid valve annuloplasty was performed in the presence of tricuspid annular dilatation but without significant functional tricuspid regurgitation. The study randomised 44 patients undergoing mitral valve surgery with less than moderate functional tricuspid regurgitation but a dilated tricuspid annulus (≥ 40mm) to either mitral valve surgery alone or to mitral valve surgery plus tricuspid valve annuloplasty. At 12 months, patients who had concomitant tricuspid valve annuloplasty had less TR (TR absent in 71% versus 19%, p=0.001; moderate-to-severe TR in 0% versus 28%, p=0.02), greater right ventricular reverse remodelling, and greater improvement in the six minute walk test (+115m versus +75m, p=0.008).

This study is consistent with an earlier study reporting worsening TR grade and NYHA functional class if tricuspid annular dilatation is not corrected at the time of mitral valve surgery irrespective of the grade of TR.

A previous study from Leiden, Netherlands, also reported that tricuspid valve annuloplasty at the time of mitral valve surgery in patients with tricuspid annular dilatation but without significant functional tricuspid regurgitation (TR), improved right ventricular (RV) reverse remodelling and prevented progression of TR. This study compared 80 patients undergoing mitral valve repair in 2002 in whom concomitant tricuspid annuloplasty was only performed if there was grade 3 or 4 TR (13 patients), against 102 patients operated in 2004 in whom concomitant tricuspid annuloplasty was performed if there was either grade 3 or 4 TR (21 patients) or tricuspid annular dilatation greater than 40 mm measured by echocardiography irrespective of the degree of TR (43 patients). At two years, in the 2002 cohort, where tricuspid annuloplasty was only performed if there was grade 3 or 4 TR, RV reverse remodelling was not demonstrated (RV long axis 69 ± 7 vs 70 ± 8 mm, p=0.30; RV short axis 29 ± 7 vs 30 ± 7 mm, p=0.08). TR was absent or mild in the 13 patients who had concomitant tricuspid annuloplasty, but progressed with RV dilatation in the 23 patients with tricuspid annular dilatation who did not have concomitant tricuspid annuloplasty (p<0.001). Conversely, in the 2004 cohort, where tricuspid annuloplasty was performed if either tricuspid annular dilatation or significant TR was present, RV reverse remodelling was observed (RV long axis 71 ± 6 vs 69 ± 9 mm, p=0.01; RV short axis 29 ± 5 vs 27 ± 5 mm; p<0.0001) and TR severity decreased (1.6 ± 1.0 vs 0.9 ± 0.6; p<0.0001).

ESC guidelines currently recommend tricuspid annuloplasty in patients undergoing left sided valve surgery with severe TR or moderate TR with tricuspid annular dilatation greater than 40 mm measured by echocardiography. The ACC/AHA guidelines recommend tricuspid annuloplasty at the time of mitral valve surgery for severe TR and consideration of tricuspid annuloplasty in less than severe TR if pulmonary hypertension or tricuspid annular dilatation is present.
REFERENCES


