

Impact of Tricuspid Annuloplasty on Postoperative Changes in The Right Ventricular Systolic and Diastolic Function: A Retrospective Cohort Study

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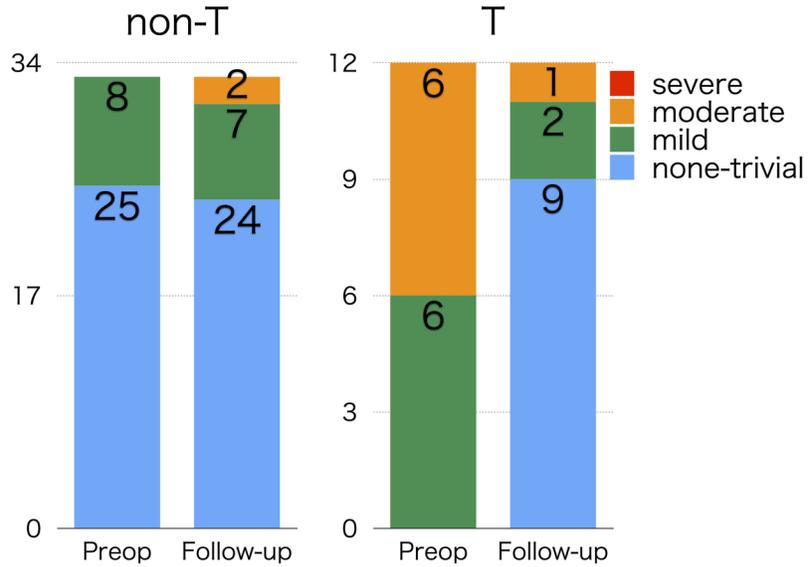
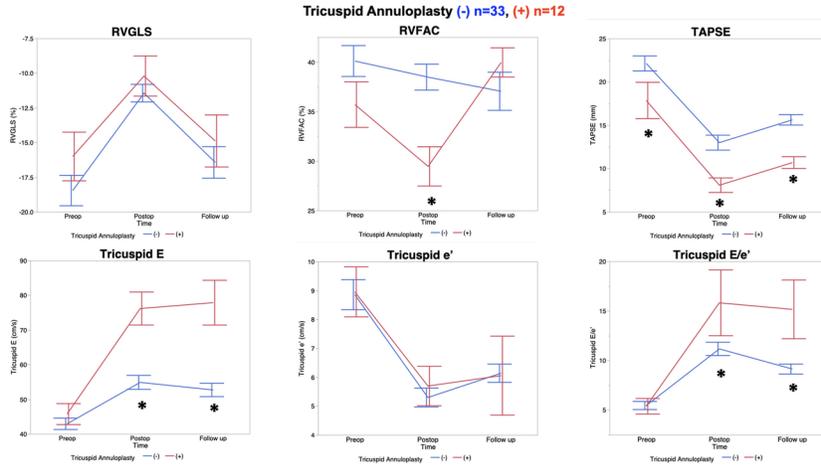
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Abstract

Objectives: To elucidate the impact of regulation of tricuspid regurgitation (TR) using tricuspid annuloplasty on postoperative changes in right ventricular (RV) systolic and diastolic functions. **Methods:** We enrolled 69 patients who underwent aortic or mitral valve surgery between July 2016 to March 2018 without recurrence. Patients with concomitant coronary artery bypass grafting or a history of previous cardiovascular surgery were excluded, remaining 45 patients enrolled. Patients were divided into 2 groups according to concomitant tricuspid annuloplasty (T: n=12 vs non-T: n=33). RV global longitudinal strain (RVGLS), RV fractional area change (RVFAC), tricuspid annular plane systolic excursion (TAPSE) and early tricuspid inflow velocity/early diastolic tricuspid annular velocity ratio (tricuspid E/e') were assessed as functional indices at preoperative, postoperative and 1-year follow-up periods. **Results:** RVFAC deteriorated postoperatively but recovered at follow-up in group T, whereas that in group non-T showed gradual deterioration overtime. RVGLS and TAPSE showed similar temporary deterioration and recovery between groups. Tricuspid E in group T increased postoperatively and showed significant difference, which was kept until follow-up period. Tricuspid e' decreased postoperatively, and recovered slightly in both groups. As a result, postoperative RV diastolic function (tricuspid E/e') showed significant difference between groups. This difference was maintained until follow-up. **Conclusions:** RV systolic function deteriorated postoperatively, but there was a tendency to improve at follow-up regardless of tricuspid annuloplasty. RV diastolic function may potentially be impaired when TR was regulated by tricuspid annuloplasty.

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Table 1.doc available at <https://authorea.com/users/315753/articles/446030-impact-of-tricuspid-annuloplasty-on-postoperative-changes-in-the-right-ventricular-systolic-and-diastolic-function-a-retrospective-cohort-study>

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