Abstract: 1335

Tricuspid anular dilatation is associated with higher mortality in patients undergoing TAVR

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Topic(s):
Computed Tomography: Valve Disease

Citation:
European Heart Journal (2019) 40 (Supplement), 722

Background: Tricuspid annular dilatation is an increasingly recognized entity associated with poor outcomes in patients with
valvular heart disease, which led to upvaluation of tricuspid annuloplasty in current European and U.S. guidelines on valvular heart
disease.

Purpose: To investigate the prognostic role of tricuspid annular dilatation measured in multi-slice CT (MDCT) datasets in patients
undergoing transfemoral aortic valve replacement (TAVR).

Methods: All consecutive patients with available MDCT data undergoing TAVR at our institution between 2013 and 2016 were
included. Maximal septal-lateral diameter was obtained from 3-dimensional MDCT datasets. Receiver-operating curves (ROC)
analysis was performed to obtain an ideal cut-off for septal-lateral dilatation in systolic and diastolic heart phase. All-cause mortality
served as endpoint.

Results: The study included 1137 patients, of whom 299 died within a mean follow-up period of 1.8±1 years. Mean patient's age
was 80.6 years and 51.5% were women. TAVR was performed via transfemoral approach in all patients and balloon-expandable
prosthesis were used in 69.4% of patients. ROC analysis revealed a cut-off of 45.7 mm for diastolic MDCT scans (n=859) and
36.1 mm for systolic MDCT scans (n=278). Patients above this threshold experienced a significantly higher mortality within the
follow-up period (s. attached Figure, hazard ratio 1.63 with 95% CI 1.39 and 1.92, p<0.001). Tricuspid annular dilatation had no
impact on procedural outcomes including device failure (2.4 vs. 2.9%, p=0.7), need for permanent pacemaker implantation (17.6
vs. 21.3%, 0.16, acute myocardial infarction (0.3 vs. 1.2%, p=0.18) and acute stroke (1.8 vs. 1.1%, p=0.28) defined according to
Valve Academic Research Consortium-2 (VARC-2) criteria.

Conclusion: Tricuspid annular dilatation assessed with MDCT in patients undergoing TAVR is associated with 63% higher all-cause
mortality. Future studies will have to determine whether interventional tricuspid annuloplasty techniques can reduce mortality in this
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