

CRT-706

Humoral Response Following Transcatheter Aortic Valve Replacement Comparing Transapical and Transfemoral Approaches

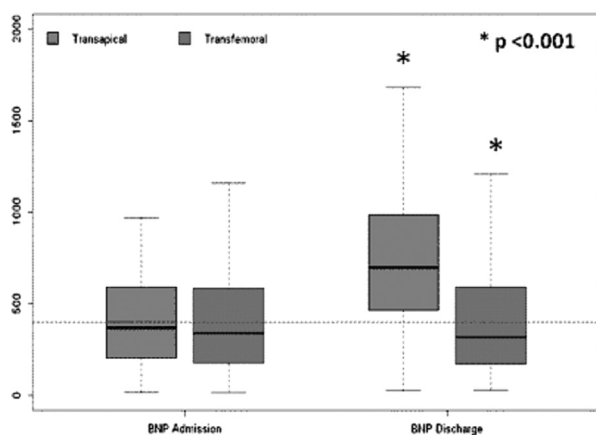
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Background: High serum brain natriuretic peptide (BNP) (>400 pg/ml) is associated with high morbidity and mortality following Transcatheter Aortic Valve Replacement (TAVR). However, whether TA is associated with a distinct humoral response pattern has not been established.

Methods: We compared the BNP distribution (median and IQR) at baseline and at hospital discharge following TAVR stratified according into those who underwent transapical (TA) or transfemoral (TF) approach.

Results: A total of 217 patients underwent TAVR for symptomatic aortic stenosis. The mean age was 84 ± 7 years-old and 27% (n=60) underwent TA approach. The prevalence of left ventricular ejection fraction (LVEF) $\leq 40\%$ (27% vs. 20%; $p=0.3$), chronic renal failure (62% vs. 59%; $p=0.7$) and the baseline median BNP levels were comparable in the TA and TF groups (TA median=368, [IQR 25th-75th = 205-591]; TF median=338 [176-584]; $p=0.6$). At discharge, the BNP levels paradoxically increased in the TA (TA median= 698 [465-989]) approach as opposed to the TF (TF median=319 [176-584]); $p<0.001$ (figure). The echocardiograph correlates for BNP at discharge were: LVEF ($r = -0.49$; $p<0.01$), left ventricular outflow tract diameter ($r = -0.48$; $p<0.03$) and the residual aortic mean aortic gradient ($r = -0.18$; $p<0.02$).

Conclusion: Patients undergoing TAVR by TA approach have a significant increase in the BNP after the procedure as compared to those who underwent TF. Additionally, the BNP levels at discharge was negatively correlated to residual aortic valve gradient, left ventricular outflow tract diameter and left ventricular ejection fraction.



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The Impact of Acute and Chronic Troponin Elevation After Transcatheter Aortic Valve Implantation

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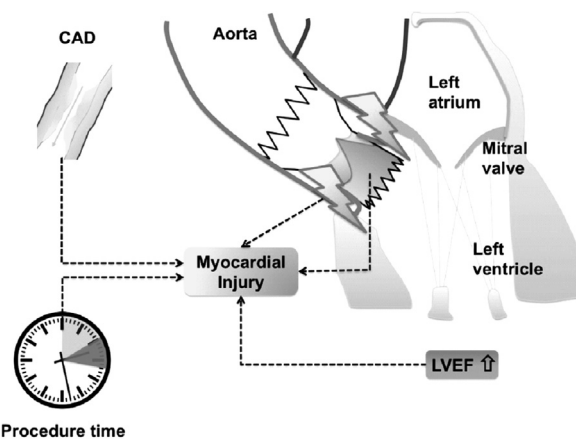
Background: Myocardial injury defined occurs frequently following transcatheter aortic valve implantation (TAVI). The aim of this study was to assess timing,

predictors, and prognostic value of peri-procedural myocardial injury and chronic troponin elevation after TAVI.

Methods: 276 patients (logistic EuroSCORE $26.6 \pm 17.1\%$) underwent transvascular TAVI. In all patients, troponin I, CK-MB, and NT-proBNP levels were measured before and after TAVI (1h, 4h, 24h, 48h, 72h, 7 days, 3, and 6 months).

Results: Myocardial injury (according to VARC-2 recommendation defined as $\Delta\text{Trop} \geq 15 \times \text{URL}$) occurred in 143/276 patients (51.8%) during the first 72 hours following TAVI. Use of a self-expanding prosthesis ($p=0.02$), coronary artery disease ($p=0.04$), higher left-ventricular ejection fraction (LVEF) ($p<0.001$), and procedure time ($p<0.001$) were independent predictors for the development of myocardial injury after TAVI. 30-day (4.2% vs. 6.1%; $p=0.48$) and 1-year mortality (19.4% vs. 26.5%; $p=0.15$) were not related to the incidence of peri-procedural myocardial injury. However, patients with chronic troponin elevation after TAVI had an increased 1-year mortality risk (HR 4.5, 95%-CI: 2.0-10.0; $p<0.001$).

Conclusion: Myocardial injury defined as $\Delta\text{Trop} \geq 15 \times \text{URL}$ after TAVI seems to be a procedure-related issue but does not impact survival. However, a post-procedural troponin increase might be useful for prognostication after TAVI.



CRT-708

Initial US Experience with Commercial Transfemoral Edwards SAPIEN Transcatheter Heart Valve Compared to Partner Cohort B for Inoperable Symptomatic Severe Aortic Stenosis

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Background: TAVR using the Edwards SAPIEN valve is approved for commercial use in the United States. This study aims to assess the clinical profile, procedural characteristics and in-hospital complications in patients treated with a commercial SAPIEN valve outside the clinical trial context.

Methods: We retrospectively analyzed 69 consecutive inoperable patients who underwent TAVR with a commercial SAPIEN valve compared to 55 PARTNER trial patients from Cohort B enrolled in the same institution by the same Heart Team.

Results: Compared to the commercial group, patients in the PARTNER Cohort B had higher mean STS score (10 ± 5 vs. 9 ± 4 ; $p=0.04$) and a lower rate of peripheral arterial disease (19% vs. 44%; $p=0.004$). The majority of patients in the commercial group had the procedure under conscious sedation (83% vs. 66%; $p=0.03$). Planned surgical cut-down for vascular access was rare in the commercial group (1.4% vs. 46%; $p<0.001$). The overall rates of major vascular complications, life threatening or major bleeding and blood transfusions were lower in commercial group (7.2% vs. 27%; $p=0.003$), (2.9% vs. 16%; $p=0.01$), and (28% vs. 60%; $p<0.001$), respectively. In-hospital all-cause mortality (5.8% vs. 9.1%; $p=0.51$) and stroke rates (7.2% vs. 14.5%; $p=0.19$) were statistically not different between the groups. The median length of hospitalization ($p<0.001$) and post-procedural length of stay ($p=0.01$) was shorter in the commercial group.