

# WORLD CONGRESS ON RHEUMATIC HEART DISEASE

2-4 November 2023 • Abu Dhabi



**Submission Id:** 322

**Title:** The Role of Biomarkers in Optimizing The Time of Surgical Intervention in Rheumatic Aortic Stenosis

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**Background & Aims:** Aortic stenosis (AS) is a well-known cause of sudden cardiac death. We aimed to determine the prognostic value of high sensitive troponin T (hs-TnT) in symptomatic patients with severe aortic stenosis (AS) and preserved left ventricular ejection fraction (LVEF) after aortic valve replacement.

**Methods:** The study included 108 patients with severe symptomatic AS (mean age =  $58.7 \pm 7.68$  years). Comprehensive echocardiography was done to assess severity of aortic stenosis, and to calculate LV mass index, LA volume index, and LVEF (calculated using biplane method of Simpsons). Peripheral blood samples were collected for hs-TnT measurement. Aortic valve replacement surgery was performed in all patients. Patients were monitored for six months after valve replacement in order to record major adverse cardiovascular events (MACE). We defined MACE as Sudden cardiac death, re-admission to the hospital for CHF and fatal arrhythmia.

**Results:** MACE occurred in 17 patients including 8 sudden cardiac deaths. We divided the patients into two groups based on the normal value of plasma levels of hs-TnT. Kaplan-Meier curve revealed a statistically significant difference in MACE rate among troponin groups (log-rank test = 5.06,  $p = 0.025$ ). Receiver operating characteristics analysis revealed that cut-off value of hs-TnT of 238.25 had a sensitivity of 70% and a specificity of 81% for predicting future MACE. In univariate analysis, hs-TnT was significantly associated with MACE (HR 1.003, 95% CI 1.002-1.005,  $P < 0.001$ ) and elevated hs-TnT was associated with a 3.1 fold increase in the incidence of postoperative MACE (HR = 3.10, 95% CI 1.09-8.80,  $P$  value = 0.034). Multivariate regression analysis revealed that hs-TnT was significant predictor for MACE (HR 1.003, 95 % CI 1.001-1.005,  $P = 0.006$ ).

**Conclusions:** High sensitive troponin T is a significant predictor for future MACE in patients with severe symptomatic AS and preserved LVEF who underwent aortic valve replacement. Early surgical intervention of rheumatic valvular stenosis should be considered once troponin rises even if the degree is less than severe by echocardiography.