**EFFECTS OF SMOKING ON ECHOCARDIOGRAPHIC AND CLINICAL OUTCOMES AFTER TRANSCATHETER AORTIC VALVE REPLACEMENT**

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**Objective:** To determine the effects of smoking on echocardiographic and clinical outcomes in patients undergoing Transcatheter Aortic Valve Replacement.

**Background:** Smoking is a known risk factor for aortic valve disease and has been shown to accelerate aortic stenosis (AS). Additionally, smoking is associated with worse outcomes perioperatively. Despite this, the limited data available in smokers who undergo surgical aortic valve replacement has not shown poorer outcomes. Since TAVR has advanced to the forefront of treatment, we sought to investigate the effect of smoking on echocardiographic and clinical outcomes in symptomatic severe AS patients undergoing TAVR.

**Method:** Clinical and echocardiographic data of 243 consecutive patients undergoing TAVR at a single tertiary academic referral center were analyzed at baseline, 30 days post-TAVR and 1-year follow-up. Patients with any history of smoking were compared to non-smokers. The association between smoking and variables was analyzed using Chi squared test and ANOVA.

**Results:** 56.4% (n=137) had a history of smoking versus 43.6%(n=106) who had never smoked. Baseline demographics were similar between the two groups, except more smokers were male (76.6% vs 30.2%, p<0.001) and had more coronary artery bypass grafting (36.5% vs 20.8%, p<.008). There was no difference between the two groups in echocardiographic changes of peak gradient (-43.42mmHg vs -45.03mmHg, p=0.68), mean gradient (-26.2mmHg vs -26.7mmHg, p= 0.84), or aortic valve area (1.21cm2 vs 1.33cm2, p=0.36) at 30 days. Smoking was not associated with worse outcomes at discharge, 30 days or 1-year follow-up in respect to length of stay, major bleed, transient ischemic attack/cerebrovascular accident, myocardial infarction, rehospitalization, or death.

**Conclusion:** While smoking should be discouraged in all patients, our data suggests it does not play a significant role in complications and outcomes for patients undergoing TAVR. Therefore, patients’ smoking status should not preclude them from undergoing this procedure. Given the paucity of data on this topic, this study highlights the need for further investigations and longer follow up regarding smoking and TAVR outcomes.