ACC.15
TCT@ACC-i2 | innovation in intervention

A1947
JACC March 17, 2015
Volume 65, Issue 10S

Valvular Heart Disease

INSIGHTS INTO TIMING, RISK FACTORS, AND OUTCOMES OF NEUROLOGIC EVENTS AFTER TRANSCATHETER AORTIC VALVE REPLACEMENT IN THE PARTNER-I TRIAL

Moderated Poster Contributions
Valvular Heart Disease Moderated Poster Theater, Poster Hall B1
Saturday, March 14, 2015, 10:30 a.m.-10:40 a.m.

Session Title: Trends and Treatment for Aortic Stenosis
Abstract Category: 40. Valvular Heart Disease: Clinical
Presentation Number: 1132M-07

Authors: *Samir R. Kapadia, Shikhar Agarwal, D. Craig Miller, John Webb, Michael Mack, Stephen Ellis, Howard Herrmann, Augusto Pichard, E. Murat Tuzcu, Lars Svensson, Craig Smith, Jeevanantham Rajeswaran, Susheel Kodali, Raj Makkar, Vinod Thourani, Eugene Blackstone, Martin Leon, Cleveland Clinic, Cleveland, OH, USA*

Background: Neurologic events (stroke and transient ischemic attack [TIA]) after transcatheter aortic valve replacement (TAVR) are an important problem that appears to be procedure, device, and patient related. Prior studies have been limited by reporting variability, short follow-up, and few events. We report a comprehensive analysis of time-related incidence, risk factors, and outcome of neurologic events after TAVR from the PARTNER-I randomized trial and continued access registries.

Methods: From 4/2007-2/2012, 2621 patients, age 84±7.2 years, underwent transfemoral (TF; 1521) or transapical (TA; 1100) TAVR in the PARTNER-I trial. In this as-treated cohort, neurologic events were identified clinically using a protocol, but without formal pre- and post-TAVR neurology oversight, and adjudicated by a Clinical Events Committee. Their occurrence and incidence were estimated non-parametrically by the Kaplan-Meier estimator and parametrically by a multiphase hazard model. A competing risk model was used to determine prevalence of neurological events in the face of mortality from other causes.

Results: Within 30 days of TAVR, 3.3% of patients experienced a stroke (TF 3.8% [95% CI 2.9%-4.8%]; TA 2.7% [95% CI 1.9%-3.8%]; P=.09), 85% occurring within 1 week. The instantaneous risk of stroke peaked on day 2, then fell to a low prolonged risk by 1-2 weeks. Within 30 days, 0.51% experienced a TIA (TF 0.72% [95% CI 0.39%-1.2%]; TA 0.25% [95% CI 0.11%-0.55%], P>.17). Risk factors for early stroke in TA-TAVR included number of post-dilatations and pacing runs, and in TF-TAVR higher peak aortic valve gradient. Risk factors for late stroke included atrial fibrillation in TA-TAVR and longer procedure time in TF-TAVR. Patients who experienced a neurologic event had higher 1-year mortality than patients who did not (TF 53% after stroke vs 18% and 36% after TIA vs 17%; TA 47% after stroke vs 20% and 36% after TIA vs 17%).

Conclusion: Post-TAVR neurologic events lead to higher 1-year mortality. Risk is highest in the immediate post-procedural period, suggesting that modifications of TAVR and emboli-prevention devices, along with better pharmacologic protection during the procedure, may mitigate this risk.