INFLUENCE OF LESIONS CHARACTERISTICS ON THIRTY-DAY OUTCOMES AFTER CAROTID ARTERY STENTING FROM THE SAPPHIRE WORLDWIDE REGISTRY

i2 Oral Contributions
Georgia World Congress Center, Room B315
Monday, March 15, 2010, 8:00 a.m.-8:15 a.m.

Session Title: Endovascular Interventions
Abstract Category: PCI - Carotid & Neurovascular
Presentation Number: 2905-05

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Background: Lesion characteristics thought to be associated with a higher incidence of adverse events after carotid artery stenting (CAS) include arch anatomy, vessel tortuosity, lesion length, and plaque morphology. The purpose of this analysis is to evaluate the clinical impact of lesion characteristics on periprocedural outcomes after CAS in the SAPPHIRE Worldwide registry.

Methods: To date, 4,007 patients have been enrolled and completed 30-day follow-up. Major adverse events (MAE), including death, stroke, and myocardial infarction were assessed out to 30-days post-procedure. Simple and multivariate logistic regression analyses were performed using baseline clinical and target lesion variables to determine predictors of 30-day MAE and stroke.

Results: Forty-eight percent of patients had a Type I arch, 40% a Type II arch and 12% a Type III arch. Twenty-five percent of target vessels had moderate to severe tortuosity, mean lesion length was 17.9 ± 8.49 mm, and 34% of lesions had moderate to severe calcification. Lesion predictors of 30-day MAE included Type III arch (1.75 [1.13, 2.72]); circumferential calcification (1.49 [1.03, 2.15]); calcification ≥3 mm (1.53 [1.00, 2.33]); and ulcerated plaque (1.57 [1.16, 2.14]). Vessel tortuosity and target lesion length were not independent predictors of MAE.

Conclusion: In this analysis, arch anatomy and plaque morphology were associated with a significant increase in 30-day MAE after CAS. SAPPHIRE Worldwide will continue to provide evidence in support of optimal patient selection and lesion criteria in patients undergoing carotid artery stenting.