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PREDICTORS OF CLINICAL BENEFIT OF RENAL ARTERY STENTING IN 1,003 PATIENTS IN SIX PROSPECTIVE MULTICENTER TRIALS

Moderated Poster Contributions

Poster Sessions, Expo North

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Background: The ability to predict clinical benefit of renal artery stent revascularization (RASR) has yet to be proven.

Methods: Patient (pt) level data from 1003 pts in 6 prospective multicenter (124 centers) United States Food and Drug Administration approved trials was pooled to develop a statistical model of predictors of clinical benefit following RASR for the treatment of hypertension (HTN). This was defined as a reduction of systolic blood pressure (BP) by > 10 mmHg or reduction in the need for one anti-HTN medication. Nine-month patency by duplex ultrasonography or contrast arteriography was a secondary endpoint. Logistic regression statistical analysis was used.

Results: Of 1003 patients, 58.9% were female, with a mean age of 62.5±12.0 years. Diabetes (DM) was present in 288/813 (35.4%). At 9 months, systolic (160.6±23.3 mmHg vs. 146.0±22.6 mmHg, P<0.0001) and diastolic (77.7±12.8 mmHg vs. 75.8±11.8 mmHg, P=0.0005) BP declined significantly. In univariate analysis, the number of baseline anti-HTN medications was associated with favorable BP response (P<0.0001) and there was a negative trend for pt age (OR=0.989, P=0.05). Logistic regression analysis revealed that the number of baseline anti-HTN medications (P<0.0001) predicted clinical benefit following RASR. In pts who received 3 or 4 anti-HTN medications, BP improved in 28.0% and 35.9%, respectively (15.7% of pts receiving more than 4 medications and 7.7% of pts receiving fewer than 3 medications responded). Nine-month patency was 447/665 (65.3%). Univariate predictors of patency included increasing age (OR=1.045, P<0.0001), lower serum creatinine (OR=0.36, P<0.0001), elevated estimated glomerular filtration rate (OR=1.02, P=0.005), presence of DM (OR=3.11, P=0.002) and a lower baseline percent diameter stenosis (OR=0.978, P=0.03). Multivariable predictors of 9-month patency included presence of DM (OR=3.29, P=0.004) and lower baseline creatinine (OR=0.213, P=0.003).

Conclusion: In the largest analysis ever published of patients treated with RASR, systolic and diastolic BP is significantly lower at 9-months. The baseline number of anti-HTN medications is a potent predictor of clinical response.