



Transplant Renal Artery Stenosis Interventions Outcomes at a High-Volume Renal Transplant Center

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Purpose: To provide outcomes analysis of endovascular interventions for transplant renal artery stenosis (TRAS) at a single, high-volume transplant center.

Methods: A single-center retrospective review was performed of all renal visceral angiography and interventions by interventional radiology from August 2010 to July 2020. Out of a total of 245 cases, only cases involving TRAS were further analyzed for primary patency and graft survival. These were then further stratified by type of intervention, whether angioplasty or stenting.

Results: 168 unique patients, 122 male and 46 female, satisfied inclusion criteria. Out of 203 arteriograms for transplant renal artery stenosis, there were 152 interventions performed; 73% angioplasty only, 15% stenting only, and 12% which involved both angioplasty and stenting. Of stented patients, 37% of stents were placed primarily and the remaining 63% were placed as a secondary intervention for refractory stenosis or as a for bail-out strategy.

Overall graft survival was 87% after a mean follow-up of 6.04 years. Of patients who received an intervention, there was 88% graft-survival. Graft failure occurred at a mean of 3.44 years post-intervention. Of the 15 patients who had graft failure, only 1 graft failed due to refractory transplant renal artery stenosis.

Primary patency rate was 86.2% after a mean follow-up of 2.6 years. 3-, 6-, and 12-month rates were 93.9%, 91.6%, and 89.3%, respectively. When further stratified, primary patency rates for primary stents were 87% compared to 84% for angioplasty alone ($p=0.9$).

Conclusion: At a single-center, the analysis of a decade of endovascular interventions for TRAS shows that angioplasty and/or stenting have reasonable mid-term patency. Angioplasty only strategy has no significant difference in patency rates compared to a stent only strategy. However, for stenting used in combination with angioplasty or as repeat interventions for refractory stenosis and bail-out strategy, the data demonstrates improved patency rates and improved graft survival.