Publication Brief

Access Survival amongst Hemodialysis Patients Referred for Preventive Angiography and Percutaneous Transluminal Angioplasty

OBJECTIVE
To assess the effectiveness of elective access angiography and percutaneous transluminal angioplasty (PTA) to prevent access failure.

STUDY
• An analysis (2004-2007) to assess which fistulas and grafts benefit from elective angiography or PTA;
• 40,132 Medicare ESRD beneficiaries with a fistula or graft receiving hemodialysis in 1341 facilities;
• Retrieved were 12,670,555 treatments dialysis treatment flow sheets where vascular access, dialysis-pump speed, access monitoring, and vital signs were charted.
• 4,198 patients were referred for intervention (angiography or PTA) before access thrombosis;
• Cox regression was used to determine whether access intervention was associated with improved 1-year access survival;
• Matched were 4181 (of 4198) subjects who received their first access intervention to 31,535 patients who had a similar IAF, access type, and clearance who had not been referred for an intervention.

STUDY
• In the 1-year period after intervention, the access failure rate was 53.7 per 100 access years in the intervention group and 49.6 in the nonintervention group, despite higher access blood flow rates seen after intervention.
• In covariate adjusted survival models, overall access survival was similar between the two groups;
• Intervention did not associate with increased survival for fistulas and grafts.

RESULTS
• Nonsurgical access intervention rate: 20.9 procedures per 100 access years.
• In year-1 after intervention, the access failure rate was 53.7 per 100 access years in the intervention group and 49.6 in the nonintervention group.
• Findings were similar for fistulas and grafts.
• In patients with a low intra-access flow rate or a new access, angiography and PTA significantly increased access survival when compared with nonintervention;
• Angiography-PTA-related upper-extremity hematoma, vessel injury, or embolism-thrombosis occurred in 1.1% of cases.

CONCLUSIONS
• Angiography-PTA provides limited access survival benefits in the ESRD population; however, intervention can prolong the cumulative patency of fistulas and grafts in select individuals;
• Angiography-PTA was associated with significantly increased access survival when the access was new or the intra-access blood flow rate was low.

REFERENCE