

**#23 EARLY FAILURE OF POLYURETHANE VASCULAR ACCESS GRAFTS FOR HEMODIALYSIS**

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**Background** : Polytetrafluoroethylene (PTFE) vascular access grafts are routinely used for hemodialysis access in our institution when primary fistulas are not possible. Recent introduction of the early access self-sealing polyurethane graft (PG) Vectra® was followed by an increase in measures required to maintain patency. This retrospective study compared graft thrombosis, interventions, and patency rates in these grafts as compared to the standard PTFE grafts.

**Methods** : This is a retrospective non-randomized cohort-controlled trial of patients undergoing hemodialysis access procedures between January 1, 2004 and August 16, 2004 using 6mm grafts at a single institution. Patients with PGs comprised the study group, and those with PTFE grafts formed the control. The two groups were compared for age, sex, use of anticoagulants or antiplatelet agents, obesity, diabetes, hypertension, and smoking. The grafts were studied depending on location, configuration, outflow vessels, episodes of thrombosis, timing of thrombosis after placement, intervention required to maintain patency, and length of patency. Patency rates were compared at 2, 4, and 8-week intervals.

**Results** : There were 30 patients in each group. Mean follow-up for the PG group was 106 days and for the PTFE group was 130.67 (p=0.178). There was a higher incidence of morbid obesity in the study (PG) group (p<0.005). There were a somewhat higher number of PTFE grafts placed in the forearm as loops than in the PG group (p=0.067). The incidence of thrombosis was much higher in the study group (15/30) vs. the control group (8/30), but did not reach statistical significance (p=0.063). Interventions were also noted to be higher in the study group but did not achieve significance (20 vs. 8). Patency rates at 2 weeks (26 vs. 29), at 4 weeks (25 vs. 28), and at 8 weeks (23 vs. 28) were lower in the study group. The number of graft thromboses at 2 weeks after implantation was 9 in the PG group and 1 in the PTFE group (p<0.001). At 4 weeks, 11 PGs had suffered thromboses as compared to 2 PTFE grafts (p<0.005). The trend approached significance at 8 weeks with 16 in the study vs. 2 in the controls (p<0.071).

**Conclusions** : The recently introduced early access vascular grafts for hemodialysis have a higher rate of early thrombosis and failure when compared to standard PTFE grafts. Our experience does not support the use of the polyurethane graft for early access hemodialysis.