

## Should 100% of ESRD Patients have an Arteriovenous Fistula? A Retrospective Review of 1700 Consecutive Procedures.

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Vascular access procedures are becoming the most prevalent surgery in the world. Previously, surgeons in the U.S. were attempting more grafts than fistulas. Revised KDOQI guidelines recommend that 66% of vascular access procedures be fistulas. Thus switching the trend to a fistula first movement.

The first choice for access at University of Miami is an arteriovenous fistula (AVF). However, not all patients are candidates for AVF. In fact, too many fistulas are now being performed without attention to specific patient profiles. In certain subpopulations, fistulas never mature or function. Schild et al published in the Journal of Vascular and Endovascular Surgery in 2004 a retrospective review of 374 consecutive fistulas. Of these, 31.3% never matured or were able to be cannulated (27.1% men and 41.2% women), requiring patients to have additional surgery. Fistulas take 1-3 months to mature to be cannulated; grafts can be used in 10-14 days. Choosing a graft rather than a fistula decreases the time that temporary catheters are necessary.

### **Methods:**

A retrospective review of 1700 cases was performed by one surgeon at one institution between 1997 and 2005. Patients were categorized by demographics, co-morbidities, previous access procedures, fistula location, and type of graft.

Complications were evaluated, patency was calculated and all access endpoints were recorded.

### **Results:**

The study reviewed 1700 procedures. The median age was 51 (62.4% male) with 57.4% fistulas and 42.6% grafts. Median patency time was 9 months, with no statistically significant difference between access types. There was no significant difference in length of patency when comparing upper arm (63.0%), lower arm (30.7%) and thigh (6.7%). Non-dominant side was a significant factor in graft survival with average survival improved by 6 months ( $p=0.008$ ). Graft infection rate was 19.5% and fistula infection rate was 3.3% ( $p<0.001$ ). The overall infection rate was 10.2%, and decreased patency rate by one-half. Thrombosis occurred in 5.3% of cases without difference between types; incidence was noted to be increased in patients with hypertension ( $p=0.042$ ). Thrombosed grafts had better salvage rates (8 months versus 2 months,  $p=0.001$ ). HIV trended towards decreased access patency.

### **Conclusion:**

Arteriovenous fistulas and grafts are both useful in providing vascular access for patients requiring hemodialysis. In patients who cannot have a functioning AVF, the data shows that grafts are an excellent alternative over double lumen catheters. Therefore, it is apparent that 100% of ESRD patients are not candidates for fistulas.