Publication Brief

Is Intra-operative Blood Flow Predictive for Early Failure of Radiocephalic Arteriovenous Fistula?

Objective
Prospective study designed to investigate the predictive value of intra-operative blood flow on early failure of primary radiocephalic arteriovenous fistulas (RCAVF) before the first effective dialysis.

Study
Autogenous RCAVFs in 58 patients were followed for an average of 30 days.

Results
- Thrombosis occurred in eight patients (14%) and non-maturation in four (7%) patients.
- Intraoperative blood flow in functioning RCAVFs was significantly higher compared to non-functioning: RCAVF (230 vs 98 mL/min; P = 0.007).
- Blood flow volume measurements with a cut-off value of 120 mL/min had a sensitivity of 67%, a specificity of 75%, and a positive predictive value of 91%.

Conclusions
Blood flow <120 mL/min has a good predictive value for early failure in RCAVF. During the procedure, this cut-off value may be used to select which RCAVF should be investigated in the operation theatre in order to correct any abnormality in real time.

Take Home Points
- This Swiss study corroborates other studies shown in the table above. It sends a clear message that measuring blood flow intraoperatively at the time of fistula creation can be a valuable predictor of probability of fistula maturation (see table above).
- Twenty to thirty percent of all AV fistulas fail to mature to be functional accesses for dialysis. When a fistula can not be used, valuable time is lost and patient quality of life is improved.
- The study sets 120 mL/min as the minimal flow to predict maturation of a radiocephalic fistula, lower than other published studies.

References