

ACCESS MONITORING STRATEGY AND LONG TERM SURVIVAL

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Maintenance hemodialysis (HD) and survival of HD patient is dependent on durable and reliable access to the circulatory system. Arteriovenous fistula's (AVF) provide the ideal vascular access for HD, but they are prone to dysfunction and failure, almost invariably caused by the onset of stenosis which prograde into thrombosis.

The primary goal of our study was to determine the efficacy of monitoring strategy in our Hemodialysis Unit, in detecting access malfunction in asymptomatic access fistulae. Bimonthly monitoring of access blood flow (Qa) during first 2 hours of HD or HDF were performed in all patients, using reversed line technique by Blood Temperature Monitor (BTM, Fresenius Medical Care, Bad Homburg, Germany). Doppler and/or elective fistulogram were taken when Qa was less than 500 ml/min and for decline of >25% from baseline. Patients with hemodynamically significant fistula stenosis undergo angioplasty or surgery before clotting. We analyzed the outcome of AVF during the monitoring program.

A total of 697 measurements were obtained over the period of 28 months, during dialysis procedure in 56 patients (30M, 26F), age 63 (28-82) years, diabetics 25%, with native AVF. 17, 9% (10/56) of patients had decreased Qa requiring intervention. We performed percutaneous transluminal angioplasties (PTA) or surgical reanastomosis for hemodynamically significant stenosis (>50% of diameter). During the follow-up we had 0, 075 thromboses per patient year.

Regular access flow screening for access stenosis, together with their sooner treatment, prolongs AV fistula patency. The median time to develop stenosis and thrombosis observed in our study suggests that a surveillance program based on bimonthly Qa measurement should be cost-effective in detecting AVF's at risk. Access flow measurements by in-line dialysance technique are feasible in all patients and suggest that, in the future Qa measurements would be accurate without confirming by Venography or Duplex sonography. Ease of use allowed becoming a part of routine care without additional staff or equipment.