

THE EFFECTS OF IMPLEMENTATION OF A VASCULAR SURVEILLANCE AND RADIOLOGICAL INTERVENTION PROGRAMME FOR ARTERIOVENOUS FISTULAS (AVFS) AND GRAFTS (AVGS)

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BACKGROUND: The NSF for Renal Services Part 1 has indicated that 90% of all prevalent chronic HD patients should have an AVF for vascular access. Regular monitoring of access blood flow allows early detection of vascular access stenosis, such that timely radiological intervention can be carried out in order to maximise the longevity of vascular access.

METHODS: We set up a vascular access surveillance programme using Transonic© ultrasound dilution access flow technique. Access flow rate was measured monthly in patients with AVFs and 3 monthly in patients with AVGs. Patients were referred for radiological intervention if access flow rate was below target (<500ml/min for AVFs or <600ml/min for AVGs). In most cases patients proceed directly from a diagnostic ultrasound and fistulogram to a fistuloplasty during the same procedure. We reviewed the outcomes in patients who underwent radiological intervention in between September 2007 to December 2008.

RESULTS: In September 2007, there were 361 prevalent HD patients, increasing to 385 by December 2008. Of these patients, 49.3% (N=178) dialysed via AVFs and 8.9% (N=32) dialysed via AVGs in September 2007. Of the patients referred for intervention (N=166), only 9 patients had fistulography alone with no intervention. There were 132 (79.5%) elective fistuloplasties and 25 (15.1%) emergency rescue procedures performed. 145 were on AVFs and 21 were on AVGs. The predominant lesions (54.8%) were venous stenoses followed by anastomotic stenoses (12%) and thromboses (10.8%). 85.5% (N=142) cases were successful with restoration of flow and function of the access. Kaplan Meir analysis did not demonstrate any difference in access patency after elective angioplasty or emergency rescue for either AVFs or AVGs. In 62% of cases the access remained patent throughout the follow up period without requiring further radiological intervention. 67.5% of patients had vascular access flow rates available both before and after the intervention with an increase in access flow of 277.6 ml/min (R=0.649, p< 0.001). During the review period, the number of patients dialysing via a central venous dialysis catheter has significantly reduced from 41.8% (N=151) to 27.5% (N=106). At the end of review, the number of patients who have a functioning AVF has increased to 61.0% (N=235) and those with AVG has increased to 11.4% (N=44).

CONCLUSIONS: The majority of radiological interventions performed were elective fistuloplasties suggesting that the surveillance programme is robust enough to detect early stenosis in AVFs and AVGs. The outcome for radiological thrombectomies was similar to that for elective fistuloplasties. The implementation of regular access flow monitoring backed up by radiological support has contributed to the reduction of central venous dialysis catheter use within our dialysis programme.