

**Abstract****Ultrasound Dilution Technique in Access Surveillance: Does it Predict Access Loss?**

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**Introduction:**

Access surveillance in managing vascular accesses prolong access life span. However, its value in routine use of any surveillance technique for detecting anatomic stenosis alone, has not been established.

**Objective:**

To examine the value of surveillance using Ultrasound dilution measurements in predicting loss of permanent haemodialysis vascular access.

**Methods:**

This is a prospective, observational, single-centre study. All patients on haemodialysis using AVF and AVG who consented were recruited in this study. Study commenced in April 2011 and completed in August 2012. Three serial Ultrasound dilution measurements were routinely performed using Transonic ®; access flow and recirculation were measured and recorded every 8 months. Demographic, clinical and laboratory data were obtained from the hospital information system (THIS) and results were analysed using the SPSS version 16.

**Results:**

Fifty-three patients were recruited; 58.5% male and 41.5% female. Mean age was 51.77±16.75 years. Four had passed away and 2 patients transplanted during the course of study. Access types were 2 Arteriovenous grafts, 34 Radiocephalic fistulas, 3 Brachio basilic 14 Brachiocephalic fistulas. Four access loss were reported 18.25±6.08 days following the first Ultrasound dilution measurements made in April 2011. Access loss resulted in 2 patients who had prior positive recirculation values and in 2/51 patients with negative recirculation values. There were no recirculation in subsequent measurements and all the vascular accesses remained patent. None needed any interventional procedures. Value of Ultrasound dilution measurement in predicting access loss were statistically significant ( $p=0.0044$ ).

**Conclusion:**

In our study, Ultrasound dilution measurements using Transonic ® significantly predicted access loss and should be considered for routine surveillance in chronic haemodialysis programme.