



The Florida ESRD Network

Educational Series # 3 *Vascular Access Monitoring / Surveillance* *Surveillance*

This is the **third** of four educational series targeted to address vascular access monitoring/surveillance.

Vascular access function and patency are crucial for optimal management of hemodialysis patients. Loss of patency and low blood flow rates (BFR) limit HD delivery, extend treatment times, and may result in underdialysis that may contribute to increased morbidity and mortality. Detection and correction of vascular access stenosis can minimize or avoid underdialysis and reduce the rate of thrombosis.

The following are methods outlined in the K/DOQI Clinical Practice Guidelines and in Fistula First Change Concept # 10 for surveillance of grafts and/or fistula:

- Direct or derived static venous pressures
- Intra-access flow methods include:
 - Doppler ultrasound (DU) and Magnetic Resonance Angiography (MRA) are direct techniques for assessing vascular access flow.
 - Duplex Doppler Ultrasound (DDU) displays both spectral and color flow images simultaneously, facilitating accurate anatomical location of the blood flow.
 - Variable Flow Doppler Ultrasound (VFU) determines access blood flow from the pump speed-induced change in doppler signal between the arterial and venous needles.
 - Crit-Line III, Glucose pump infusion technique, Urea dilution, Differential Conductivity and In Line Dialysance.
- Duplex Ultrasound
- Access recirculation measurement
- Pre-pump arterial pressure measurement
- Physical findings including persistent swelling of the arm, presence of collateral veins, prolonged bleeding post needle removal or change in the thrill

With all surveillance techniques, trend analysis, rather than a single isolated abnormal value, is more useful to detect access dysfunction to determine referral for access imaging.

Monitoring and surveillance provides the option and ability to salvage the vascular access through detection of possible stenosis and planning corrective interventions rather than urgent procedures that may disrupt the hemodialysis schedule or replacement of the access, which may result in temporary use of catheter.

See series # 4 that addresses the patient plan of care and facility Quality Improvement Program recommendations.

Additional information can be located in the K/DOQI Guidelines at
<http://www.kidney.org/PROFESSIONALS/kdoqi/guidelines.cfm>

The Florida ESRD Network (Network 7) is providing this fax blast as a technical assistance activity for the Florida renal community.