Revised: VASCULAR ACCESS: Monitoring for Access Dysfunction

STANDARDS:

- Permanent hemodialysis AV accesses must be monitored for access dysfunction.
- An organized monitoring approach with regular assessment of clinical parameters of the AV access and dialysis adequacy is required.

FACILITY LEVEL PERFORMANCE:

- *Monitoring for Vascular Access Dysfunction through Physical Examination*.
- *Monitoring for Vascular Access Dysfunction through Pre-Pump Arterial Pressure.*
- *Routine Monitoring and Surveillance of Grafts for the Presence of Stenosis.*

PERFORMANCE TARGET: Routine monitoring for access dysfunction occurs for all (100%) hemodialysis patients receiving hemodialysis therapy utilizing Arteriovenous Fistulas (AVF's) or Arteriovenous Grafts (AVG's) as primary vascular access.

RATIONALE: (K/DOQI™ Vascular Access Clinical Practice Guidelines)

MONITORING:

1. Access patency should be ensured before each treatment before any attempts to cannulate the access.
2. Access characteristics, such as pulsatility and presence of thrill, as well as flow and pressure, should be recorded and tracked in a medical record and be available to all caregivers.
3. Data should be analyzed at least monthly to evaluate access dysfunction.

MEASUREMENT / FREQUENCY:

1. It is not clear that access flow measurements performed at a monthly frequency provide sufficient data stability to make decisions. Until additional studies are performed to determine the optimal frequency, more frequent measurements are recommended.

2. Static pressure measurements require less technology and should be made more frequently than flow measurements. Direct measurements of static pressure ratios should be made every 2 weeks. Less-direct measurements should be made weekly. Dynamic pressures, if used, should be measured with each dialysis treatment, but derivation of a static pressure should be attempted, rather than using the raw numbers.

3. Measurement of recirculation is not recommended as a surveillance technique in grafts.

4. Thrombosis in fistulae develops more slowly than in grafts. Flow measurements performed at a monthly frequency appear to be adequate. Until additional studies are performed to determine the optimal frequency, less frequent measurements are not recommended.

5. Because static pressure measurements are inherently less accurate in detecting access stenosis in fistulae, the frequency should not be less than in grafts. Direct measurements of static pressure ratios should be made every 2 weeks. Less-direct measurements should be made weekly. Dynamic pressures should be measured with each dialysis. Increased recirculation can indicate reduced effective blood pump flow, resulting in inadequate dialysis.

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PHYSICAL EXAM:

Regular physical examination and monitoring of dialysis treatments (e.g., physical findings of persistent swelling of the arm, clotting of the access, prolonged bleeding after needle withdrawal, or altered pulse characteristics of pulse or thrill in access; and elevated negative arterial pre-pump pressures that prevent increasing to acceptable blood flow can be indications of dysfunction (i.e., stenosis).

EVALUATION:

- The MRB requires the Network staff to evaluate facilities for compliance with established standards. Standard evaluation will be done with performance of the National Clinical Performance Measures.

- With the upcoming release of CROWNWeb 1.0 in February 2009, all CPM's, which have been approved by CMS, will have outcomes being calculated at the facility level and aggregated at the ESRD Network and National levels.

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