5 Diamond Patient Safety Program

Stenosis Surveillance

2009

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The 5-Diamond Patient Safety Program is endorsed by the Renal Physicians Association (RPA) and American Nephrology Nurses’ Association (ANNA).

Objectives

• To increase the stenosis surveillance performed per the K-DOQI Guidelines.
• To aid in the development of a vascular access QAPI that will:
  1. Improve the rate of use and preservation of Arteriovenous (AV) fistulas
  2. Decrease the inappropriate use of catheters
  3. Improve the care provided for all types of vascular access

What is Stenosis Surveillance?

• Stenosis surveillance is “the periodic evaluation of the vascular access by using tests that may involve special instrumentation and for which an abnormal test result suggests the presence of dysfunction”
  -K-DOQI

Why is Stenosis Surveillance Important?

• Low blood flow rates and loss of patency affect Hemodialysis (HD) delivery and increase morbidity and mortality
• Thrombosis is the leading cause of loss of vascular access patency in long-term AV accesses, especially grafts
• Thrombosis adversely affects quality of life, may lead to hospitalization, and increases costs
K-DOQI Recommended Methods for Stenosis Surveillance

- Color-Flow Doppler: Color-Flow Doppler performed as a method of surveillance for the presence of stenosis at least once during the quarter
- Static Venous Pressure: Static Venous Pressure, direct or derived, performed as a method of surveillance for the presence of stenosis at least once every two weeks
- On-Line Clearance/Access Flow Methods: The On-Line Clearance (OLC) or Access Flow Methods of surveillance for the presence of stenosis performed at least once a month

Static Venous Pressure

- **Definition:** Pressure in the access can be measured directly at the site of cannulation in the “arterial” and “venous” segments of the graft by using a pressure measuring device.
- **Documentation:**
  - Dated treatment sheet, progress note or log
- **Frequency:**
  - Minimally every 2 weeks within a quarter

Color Flow Doppler

- **Definition:** Quantitative color velocity imaging, sometimes referred to as Duplex Doppler Ultrasound
- **Documentation:**
  - Radiology report
  - Progress note of radiology findings
- **Frequency:**
  - Once within a quarter
  - Can be used in conjunction with another form of surveillance

On-Line Clearance (OLC) or Access Flow Methods

- **Definition:** A process that compares percent recirculation to clearance value, looks for a positive correlation between Hemodialysis inefficiency and access management.
- **Documentation:**
  - Dated treatment sheet, progress note or printout
- **Frequency:**
  - Once a month
Stenosis Surveillance Change Concepts

- # 1 Routine Stenosis Surveillance
- # 2 Clinical Team Education
- # 3 Patient Education
- # 4 Outcomes Feedback

# 1 Routine Stenosis Surveillance

- Review K-DOQI guidelines for stenosis surveillance recommendations including measurement frequency
- Facility interdisciplinary team adopts standard procedure for stenosis surveillance
- Healthcare Personnel has accountability for reliable surveillance, data collection, documentation and review
- Timely referral of trended data to Nephrologists for:
  - Intervention for access dysfunction
  - Correlation with adequacy data

# 2 Clinical Team Education

- Routine in-service or educational programs on surveillance type used in the facility
  - Focus on type and frequency of surveillance
- Continuing educational programs by Nephrologists on stenosis surveillance
- Continuing education programs on vascular access monitoring that include:
  - Tracking difficulties experienced either pre or post treatment
  - Physical assessment

# 3 Patient Education

- Care plans include patient education on vascular access care:
  - Importance of access hygiene practiced by both patient and staff
  - Signs and symptoms of infection
  - How to feel the pulse or thrill
  - Ensuring that staff rotate cannulation sites (unless using button hole method)
# 4 Outcomes feedback

- Trend surveillance data with access interventions
- Review surveillance data in staff meetings
  - Discuss and evaluate data trends with clotting incidents
  - Ensure improvements are sustained
- Utilize surveillance data in QAPI

Conditions for Coverage

The Interdisciplinary Team (IDT) must provide vascular access monitoring and appropriate, timely referrals to achieve and sustain vascular access.

Selected Fistula First (FF) Change Concepts

- # 9 Monitoring and Maintenance to assure adequate access function
- # 6 Secondary AV fistula (AVF) placement in patients with AV grafts (AVGs)
- # 7 AVF placement in patients with catheters where indicated

FFBI Change Concept 9

- Monitoring and maintenance to assure adequate access function
  - Adopt standard procedures for monitoring, surveillance and timely referral for failing accesses
  - Develop a plan for each patient to determine extent of interventions on an existing access before evaluating and mapping for an AVF
FFBI Change Concept # 6

• Secondary AVF placement in patients with AVGs
  – Adopting a “sleeves up” protocol with minimum monthly monitoring of outflow veins
  – Consider AVF placement in patients with history of repeated AVG problems
  – Trend surveillance and monitoring information for proactive access care

FFBI Change Concept 7

• AVF placement in patients with catheters where indicated
  – Document
    • Vessel mapping
    • Surgeon evaluation
    • Maturation and cannulation
    • Catheter removal

Plan of Care

• Medical records must include evidence of evaluation and basis for the placement of the current access
  – Evaluation for the appropriate vascular access takes into consideration co-morbid conditions, risk factors and whether the patient is a candidate for an AV Fistula

Plan of Care continued

• The patient’s access must be monitored for symptoms of stenosis and to prevent access failure.
  – Physical examination of the access, reviewing pressure changes during HD or noting difficulties in cannulation and/or hemostasis
  – Trending adequacy results
  – Timely referral when indicated
  – Patient education for self-monitoring
Documentation

• Surveillance or monitoring documentation can include:
  – Progress notes
  – Treatment sheets
  – Logs
• Documentation must indicate frequency of surveillance
• A member of the IDT must monitor documentation to identify trends and take action as indicated