

Change Concepts for Increasing the Prevalence of AV Fistulas for Hemodialysis

Here are 11 key clinical and organizational changes for increasing AV fistula use and improving hemodialysis patient outcomes:

1. Routine CQI review of vascular access
 - Designate staff member in dialysis facility (RN if feasible) responsible for vascular access CQI.
 - Assemble multi-disciplinary vascular access CQI team in facility or hospital.
 - Minimally: Medical Director and RN (VA CQI Coordinator).
 - Ideally: Representatives of all key disciplines including access surgeons and interventionalists.
 - Investigate and track all non-AVF access placements, and AVF failures.

2. Timely referral to nephrologist
 - Primary care physicians utilize ESRD/CKD referral criteria to ensure timely referral of patients to nephrologists.
 - Establish meaningful criteria for PCPs who may not perform GFR or creatinine clearance testing.
 - Nephrologist documents AVF plan for all patients expected to require renal replacement therapy.
 - Designated nephrology staff person educates patient and family to protect vessels, when possible using bracelet as reminder.

3. Early referral to surgeon for “AVF only” evaluation and timely placement
 - Nephrologist/skilled nurse performs appropriate evaluation and physical exam prior to surgery referral.
 - Nephrologist refers for vessel mapping where feasible, prior to surgery referral.
 - Nephrologist refers patients to surgeons for “AVF only” evaluation, no later than Stage 4 CKD (GFR<30). Surgery scheduled with sufficient lead-time for AVF maturation.
 - Nephrologist defines AVF expectations to surgeon, including vessel mapping (if not already performed).
 - If timely placement of AVF does not occur, nephrologist ensures that patient receives AVF evaluation and placement at the time of initial hospitalization for temporary access (e.g. catheter).

4. Surgeon selection based on best outcomes, willingness, and ability to provide access services
 - Nephrologists communicate standards and expectations to surgeons performing access, e.g., K/DOQI minimal standards for AVF placement, and training in current techniques for AVFs.
 - Nephrologists refer to surgeons willing and able to meet the standards and expectations.
 - Surgeons are continuously evaluated on frequency, quality and patency of access placements. Data collection ideally is initiated and reported at the dialysis center as part of ongoing CQI process, and can be aggregated at the Network level.
5. Full range of appropriate surgical approaches to AVF evaluation and placement
 - Surgeons utilize current techniques for AVF placement including vein transposition.
 - Surgeons ensure mapping is performed for any patient not clearly suitable for AVF based only on physical exam.
 - Surgeons work with nephrologists to plan for and place secondary AVFs in suitable AV graft patients.
6. Secondary AVF placement in patients with AV grafts
 - Nephrologists evaluate every AV graft patient for possible secondary AV fistula conversion, including mapping as indicated, and document the plan in the patient's record.
 - Dialysis facility staff and/or rounding nephrologists examine outflow vein of all graft patients ("sleeves up") during dialysis treatments (minimum frequency, monthly). Identify patients who may be suitable for elective secondary AVF conversion in upper arm and inform nephrologist of suitable outflow vein.
 - Nephrologists refer to surgeon for placement of secondary AVF before failure of AVG.
7. AVF placement in patients with catheters where indicated
 - Regardless of prior access (e.g. AV graft), nephrologists and surgeons evaluate all catheter patients as soon as possible for AVF, including mapping as indicated.
 - Facility implements protocol to track all catheter patients for early removal of catheter.
8. Cannulation training for AV fistulas
 - Facility uses best cannulators and best teaching tools (e.g., videos) to teach AVF cannulation to all appropriate dialysis staff.
 - Dialysis staff use specific protocols for initial dialysis treatments with new AVFs and assign the most skilled staff to such patients.
 - Facility offers option of self-cannulation to patients who are interested and able.
9. Monitoring and surveillance to ensure adequate access function
 - Nephrologists and surgeons conduct post-operative physical evaluation of AVFs in 4 weeks to detect early signs of failure and refer for intervention as indicated.
 - Facilities adopt standard procedures for monitoring, surveillance, and timely referral for the failing AVF.
 - Nephrologists, interventional radiologists, and surgeons adopt standard criteria, and a plan for each patient, to determine the appropriate extent of intervention on an existing access before considering placing a new access.

10. Education for care-givers and patients

- Routine facility staff in-servicing and education program in vascular access.
- Continuing education for all caregivers to include periodic in-services by nephrologists, surgeons, and interventionalists.
- Facilities educate patients to improve quality of care and outcomes (e.g., prepping puncture sites, applying pressure at needle sites, etc.).

11. Outcomes feedback to guide practice

- Networks work with dialysis providers to give specific feedback to all decision-makers on incident and prevalent rates of AVF, AVG, and catheter use.
- Review data monthly or quarterly in facility staff meetings. Present and evaluate data trended over time for incident and prevalent rates of AVF, AVG, and catheter use.