

Can Outpatient Vascular Access Centers Benefit Renal Care?

Vascular access is an essential component of a kidney disease patient's dialysis care. It literally connects patients to the dialysis machine to clean their blood. It can also pose a problem for patients' health with infection, which, in turn, can be costly for the healthcare system due to hospitalization. Enter the vascular access outpatient clinic. These clinics hope to change the renal care landscape by decreasing costs and improving the health of patients by treating vascular access directly and not as an afterthought.

Therefore, Renal Business Today asked some of the leaders in vascular access their thoughts on the role their clinics play in healthcare. Below is a roundtable discussion that includes Albert D. Sam II, MD, FACS, a vascular surgeon at Baton Rouge, La.-based Vascular Surgery Associates and clinical assistant professor at Louisiana State University Health Sciences Center; Janet R. Dees, president of American Vascular Access; Robert Kraus, vice president of marketing and sales with Vascular Access Centers, and Aris Urbanes, MD, vice president of provider relations with Lifeline Vascular Access. The U.S. Vascular response includes Deborah Wells, Business Unit president; Denise Sellars, RN, CDN, vice president of Quality; Ernest Gutierrez, director of Operations; Steve Fiander, vice president of Market Development.

Is the renal community doing a good job with vascular access?

Sam: Significant variation exists regarding the approach to vascular access regionally and thus underscores the main factor determining the quality of care rendered. Communities where nephrologists enjoy a collaborative, proactive relationship with surgeons that have embraced vascular access usually provide the best care to these challenging patients. Generally, this principle is gaining momentum in the U.S. and hopefully improved outcomes will be the end result. Besides the obvious benefits seen in efficiency, there are several reasons why collaboration across specialties in delivering care for access patients has been more present in recent times: More vascular fellowship trained surgeons are performing access procedures than in previous years and thus vascular access (and its inherent complicating issues) fits better in the workflow of these practices rather than in the general or transplant surgeon's practice; more communities have freestanding access centers focused solely on the treatment of access patients; and the incidence of renal failure continues to increase requiring all practitioners to develop algorithms and systems to efficiently handle this increasing patient population.

Urbanes: Since the Fistula First Breakthrough Initiative was introduced in 2005, there has been a noticeable and significant increase in prevalent patients dialyzing with AV fistulae, although this remains below the target 65 percent rate nationwide. Certainly, there is greater awareness in the general renal community of physicians, nurses, technologists and patients of the superiority of fistulae over grafts and catheters. Nephrologists, nurses and dialysis staff, including patient care technicians, social workers and dieticians, and peer resources have been instrumental in educating patients regarding AVF creation and in particular, early placement in anticipation of the need for dialysis. Our surgical and radiology colleagues have likewise evolved in their involvement in and dedication to assuring that our patients

have the best possible functional fistula. With the advent of interventional nephrology as a subspecialty of nephrology, we have been able to marry our general care of the nephrology patient, from pre-dialysis to dialysis and all its attendant complications, to the creation and maintenance of vascular access which remains the lifeline of our patients. What has previously been a poorly understood and woefully under treated problem of our patients now has greater awareness within the nephrology community, and consequently has problems recognized and treated earlier.

U.S. Vascular: In recent years there has been a growing initiative from the renal community to make sure that the dialysis patient has the best possible vascular access care. Although the renal community is still not at the threshold it is striving for, many industry product and service providers are developing various strategies to support and promote the increased use of autogenous fistulae. Both the National Kidney Foundation and the Centers for Medicare & Medicaid Services (CMS), along with the clinical nephrology community, have been instrumental in establishing specific guidelines for the creation and management of hemodialysis vascular accesses. Education and timely monitoring of end-stage renal disease (ESRD) patients are essential to achieving the goals of CMS and their Fistula First program. A continued collaborative effort of all in the community is necessary to enhance the quality care to the hemodialysis patient, which may also result in more efficient use of healthcare resources.

Dees: Yes, the renal community is doing a good job and has implemented a comprehensive plan in terms of improving vascular access via the programs of fistula first, surveillance and monitoring. Nurses and nephrologists have expressed their frustration in obtaining optimal access care for their patients. The cost and inconvenience of hospitalization has made this awareness acute.

The specialty of interventional nephrology emerged due to less than satisfactory access care and now CMS is moving to vascular centers for creation of fistulas by interventional nephrologists for better placement and care. We all know that an AV fistula is optimal but requires time to mature whereas many patients still present acutely or are too compromised for a fistula or graft so a catheter becomes the best alternative. In addition to the catheter all efforts to create and mature an AV fistula should be pursued or graft placement if warranted. Interventional nephrologists' are the access MDs of choice as they are aware of the repercussions to the patient in terms of catheters, infections and hospitalizations.

Kraus: I believe the renal community is working to do a better job with vascular access. The Fistula First initiative has galvanized everyone to take the necessary steps to raise fistula placement. The ESRD Network data on vascular access (fistula creation) is improving every year. However there is still much work to be done as we still see significant number of catheters being used. That is why every dialysis programs need an access champions to direct the patients care and keep the vascular team focused on its mission.

What steps can be taken by nephrologists and/or primary care physicians to ensure better vascular access care?

U.S. Vascular: Educating the patient and their significant other is the first step to ensuring better vascular access care. Ensuring dialysis centers are monitoring access monthly is being mandated by CMS according to the new rules posted in October 2008. V tag 550 (5) states the interdisciplinary team must provide vascular access monitoring and appropriate, timely referrals to achieve and sustain vascular access. The hemodialysis patient must be evaluated for the appropriate vascular access type, taking into consideration co-morbid conditions, other risk factors and whether the patient is a potential candidate for arteriovenous fistula placement. And V tag 551 states The patient's vascular access must be monitored to prevent access failure, including monitoring of arteriovenous grafts and fistulae for symptoms of stenosis. While the physicians are responsible for overseeing the care given to the patients, the dialysis staff has the more direct hands on care given to the patients. Ensuring the staff is following the federal regulations will be the step physicians must take to ensure better vascular access care.

Dees: Steps to ensure better access care include early diagnosis, vein mapping and early fistula creation. Cannulation techniques are essential to fistula maturation and longevity as is patient education. The newer surveillance and monitoring tools that are available, such as Vasc-Alert, will earlier identify the troublesome access and indicate a need for early intervention as opposed to thrombosed accesses. Routine fistulagrams in addition to surveillance, patient education and staff in servicing will ensure the transition from clotted accesses to early intervention thus reducing the trauma and more extensive procedures.

Kraus: Education is key. PCPs need to understand early referral of a pre-ESRD patients to a nephrologists is important. (CKD programs are making a difference.) Many patients present uremic and then a temporary catheter is placed. Educating the patients on AVF, AVG and catheters along with caring for their access after placement are all fundamentals that need to be in practice everyday.

Urbanes: Our primary care colleagues and nephrologists are absolutely crucial in our efforts to assure that our patients have the optimum vascular access. This begins with preservation of venous access sites in any patient identified with CKD. While the traditional teaching of avoiding blood pressures and venipuncture in the non-dominant arm remains applicable, the new and emerging menace we face is the proliferation of the use of PICCs and other long-term venous access catheters/ports. That these catheters can cause venous thrombosis and/or stenosis in as brief a period as two weeks should temper the zeal with which these implements are used in CKD patients. While we do educate our patients and their caregivers on the importance of vein preservation, it is also imperative that our other medical colleagues similarly advocate for the same proscription whenever possible. Secondly, early referral to a surgeon who has shown an interest and proficiency in vascular access has been shown to increase the success rate of AVF creation. This should be accompanied by pre-operative vascular mapping in order to assess for vessel patency and caliber and to assure contiguity with proximal venous structures free of obstruction or other pathology that would preclude successful fistula creation.

Sam: Nephrologists and other primary care physicians aid the access care patient significantly primarily by their action at two time points: prior to access placement, and once a functioning access has been achieved. Prior to access placement, it is vital to eliminate or significantly minimize the length of time that a patient relies on a catheter for dialysis. Thus, early autogenous access creation is the Holy Grail of vascular access care. It is well established that early access construction is associated with a lower risk of death and sepsis. Also, pre-dialysis nephrology referral is associated with a shorter duration of catheter use after the initiation of dialysis and with a greater likelihood of autogenous access placement—a superior conduit compared to nonautogenous access. Once an access is established, nephrologists must be vigilant that the dialysis units are properly caring for the access by using vigilant sterile techniques when cannulating the access, taking care to rotate the needles to various sites on the access with each dialysis session avoid psuedoaneurysm formation, and not applying excess occlusion pressure once the needles are removed.

How do outpatient vascular access clinics help improve outcomes and reduce cost?

Dees: Outpatient vascular access centers help improve outcomes by early identification and treatment of access related issues in an outpatient arena with less exposure to hospitals and infection. Access centers, through early intervention and monitoring, have the ability to schedule and see the patients on their non-dialysis days for follow up with angiograms and angioplasties if needed.

The cost for this type of intervention is 40 percent to 50 percent less than if done in the hospital setting. The current cost of vascular access care is between \$1.5 billion and \$2 billion per year for 400,000 patients. Half of these procedures can be done in an outpatient setting, with quality and personalized care for half the cost and less risk of exposure to infection. CMS is encouraging these procedures and others to be done in an outpatient area for these reasons and for the level of patient satisfaction. Additionally, the loss in revenue for the dialysis provider in terms of missed treatments is a large component of higher costs on the dialysis provider side and ensuing hospital dialysis which is more expensive and inconvenient. Vascular access centers just make sense for the physicians, the patients and the providers.

Kraus: Access centers improve outcome because they focus on one thing: the dialysis patient. Our centers work on a same day/next day service model, so emergent issues are dealt with in a expedient manner. Hospital have a difficult time matching this because of all the other services they provide. Many patients are forced to wait at hospitals and depending on time frames an access can become unusable. As far as cost, hospitals carry more overhead than an access center and that cost appears in the data. I believe USRDS has access intervention with complications around \$12,000 vs. \$4,000 for outpatient center.

Sam: Vascular access centers are specialized facilities that only provide care to patients with either thrombosed or malfunctioning vascular accesses. Since the scope of service is limited, the access center should theoretically be able to operate efficiently and with better outcomes than if these services were provided in a hospital-based facility. Although no mandate currently exists, in the future these centers

and others will likely be required to compile outcome data to provide quantitative evidence of the quality of care rendered. In some instances, access centers have actually increased the cost of care as greater numbers of repeat interventional procedures were performed to maintain access rather than more durable surgical ones that were standard prior to the center's existence. This underscores the necessity for strong collaborative partnerships across specialties to ensure maximal clinical and economic efficiencies in the operations of these access facilities.

U.S. Vascular: There are many components to an access center successfully improving quality outcomes in the patients it cares for. The first step is to have an integrated vascular access management program. The ideal program not only treats the patients' immediate vascular access needs, but also takes into consideration the full spectrum of each patient's care in order to provide a continuity of care that ultimately not only improved the patients' outcomes but their quality of life. The presence of a vascular access center whose staff is well educated in the needs of both the dialysis clinics and the dialysis patients, knowledgeable about the need for an access flow monitoring program, and following proper protocols for referral is vital. Early detection and treatment can decrease clotting of accesses, therefore decreasing the need for permanent catheter placement. In turn, there will be decreased hospitalization due to a decreased sepsis rate, as well as a decrease in missed treatments and surgical interventions—all of which can significantly improve patients' outcomes, while reducing cost.

Urbanes: With highly streamlined operations same-day appointments are often available especially for access declots. Problems are quickly corrected and patients return to their dialysis facilities without missing any treatments, which is a clear advantage for patients and their dialysis centers. Addressing pathology at a less severe stage makes sure that the patient will not have to suffer weeks of declining dialysis efficiency until the access clots off completely.

Communication between the access center and the dialysis facility is essential in ensuring that the patient's problems are understood and addressed promptly and that there is follow-up with the patient and the dialysis facility after the procedure is performed. Guidelines for specific symptoms or signs that may presage the development of recurrent or similar lesions are given. This communication may take the form of planning for the next access if it is felt that the viability of the current one is limited. This will greatly reduce the likelihood that the patient will end up with a catheter while awaiting for access creation when the current one eventually fails. While this improves and promotes patient care and comfort, safety is never compromised and cost benefits are accrued because hospitalization and missed treatments are avoided. RBT