John R. Ross, MD

An expert in AV access management discusses physician training, the state of vascular access, and how to provide patients with the skills to self-diagnose.

As someone who has built a great deal of his practice around achieving and maintaining arteriovenous (AV) access, what have you observed about the maturation of the science and where access treatment is headed? The creation and maintenance of hemodialysis AV access is evolving and hopefully will continue to do so to produce positive results for end-stage renal disease (ESRD) patients. I believe that the AV access subspecialty is gaining recognition as an entity unto itself. AV access has gained the attention of the federal government and is being widely recognized by medical device companies as a field of interest. The field of AV access lends itself well to research and has implications for other vascular applications. Hopefully, the medical device companies partnering with physicians dedicated to AV access will aid ESRD patients to meet the challenges of appropriate access choice and maintenance of AV access.

How would you describe your center's approach to AV access? The goal of our access program is to attempt to ensure that a patient never misses a day of dialysis. The costs, both financial and physical, of delayed care are well documented. To meet this goal, a comprehensive program was established. We have found that the program depends on dedicated people at all levels of care, inclusive of the personnel rendering care in the dialysis units and family members. The approach is not just the procedures; it is the process.

Our intent is to evaluate and manage access issues as quickly as possible, thereby obviating the need for hospitalizations and missed dialysis treatments. Frequently, the patients undergo access intervention and, if needed, undergo dialysis on the same day. We accomplish this by either returning the patients to their outpatient unit or providing dialysis at our facility.

We hope that our approach improves the quality of life for our ESRD patients.

What clinical research are you currently conducting? As a usual practice, we are typically engaged in two to three clinical trials annually. We are currently participating in trials addressing the safety of a biological approach to the prevention of anastomotic strictures, mechanical treatment of AV access stenoses by using stents, and a device for catheter-dependent ESRD patients.

There is a tremendous opportunity for industry to delve into the science of AV access. During my participation in clinical research, I have noted that AV access is frequently chosen for development of a product due to the "warp drive" of vascular access. Due to the nature of AV access, particularly the increased blood supply, you may frequently be able to evaluate the success of a treatment within 6 months versus 2 to 3 years in other areas of the body. Of particular interest to me is the development of a percutaneous AV access placement in the access-challenged patient.

How do you train your patients to observe their symptoms so that they can come to you with reliable information about their condition? Our program includes a patient educator. Prior to discharge after access creation and/or intervention, our patients are given a stethoscope. The educator is responsible for teaching the patient and family (or caregiver) the proper use of the stethoscope for identifying occlusions or pending complications. Patients are asked to listen to their graft or fistula daily. If they do not identify the characteristic bruit and palpate the thrill, they are aware that they will require intervention. Of course, patient education includes cannulation rotation, identifying signs and symptoms of infection or other complication, and care of the access site. Many times, patient identification of problems lends itself to immediate attention, thus averting a loss of time, loss of dialysis, and/or loss of an access.

It is my philosophy that the participation of patients in their care lends to the patient a sense of being connected to their outcome. We encourage our patients to interact with the personnel at their dialysis units. Thus, we hope to make their care a team effort with enhancement of their quality of life.

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What can you tell us about extending the lives of grafts and access sites? Experience has taught me that it is crucial to select the right access at the right time for the individual patient. The choice of access must include assessment of the artery and vein but also the patient's age, skin type and condition, cardiac status, and transplant options. Consideration of access placement should also encompass future plans for access. Because all accesses are dated, it is imperative to consider the best access at the time with consideration for future placements. Our goal is to provide the patient with a successful peripheral access and to attempt to avoid or limit the use of vascular dialysis catheters due to the complications associated with catheter use. Every attempt is made to maintain an access for as long as possible.

The greatest variable is not the access; it is the patient as a whole. The specific anatomy and physiology of each patient will largely determine the longevity of the access. The engagement of the patient with the care of their access has an impact on the longevity of the access.

What is the function of the American Society of Diagnostic and Interventional Nephrology (ASDIN)? ASDIN is a society of interventional and diagnostic nephrologists. Nephrologists are entering the arena of access care. The society offers certification for diagnostic and interventional nephrology. It has been a joy, and quite exciting, for me to participate as an instructor in our certified training center. The curriculum includes placement of dialysis catheters, percutaneous access interventions, and access maintenance. This experience has been quite rewarding. It has truly been a pleasure to teach the nephrologists. Each candidate has exemplified tremendous competency.

I view the function of ASDIN as a support group for interventional nephrologists and perhaps, more importantly, I believe the role of ASDIN has contributed to improving the quality of life for ESRD patients. It has been my good fortune to have the pleasure of knowing some of the heroes of ASDIN, such as Gerald Beathard, MD, PhD; Jack Work, MD; and Stephen Ash, MD. I certainly recognize that there are other heroes in the evolution of access care, but these individuals have personally been quite influential.

With the society as a leader in the field, I do believe a partnership of governmental agencies, physicians, medical industry, and engaged patients will continue to improve the state of AV access. ■

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