

For old or young dialysis patients, AV fistulas remain pure gold

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A new study shows that for those individuals with chronic kidney disease, it doesn't matter if you're young or old: arteriovenous (AV) fistulas remain the gold standard for maintaining access to one's circulatory system to provide life-sustaining dialysis. Interventional radiologists found no difference between the two age groups when it comes to "patency" or the openness of AV fistulas or accesses needed for dialysis. Their results were presented at the Society of Interventional Radiology's 34th Annual Scientific Meeting.

"Elderly patients' arteriovenous (AV) fistulas—vascular accesses needed for [dialysis](#) treatment—responded just as well as those in younger [patients](#)—in length of time the access stayed open and in moving [blood](#) flow efficiently. An AV fistula is the preferred access at any age," said Andrew R. Forauer, M.D., an interventional radiologist at Dartmouth-Hitchcock Medical Center in Lebanon, N.H. When kidneys fail—called chronic kidney or end-stage renal disease—treatment in the form of regular dialysis (or [hemodialysis](#)) is needed to replace the kidney's job of ridding the body of toxic waste products to maintain fluid, electrolyte and acid-base balance.

A machine is used to filter blood outside one's body, allowing blood to flow, a few ounces at a time, through a special filter that removes wastes and extra fluids. The clean blood is then returned to a dialysis patient's body. Dialysis helps women and men feel better and live longer. "One of the greatest challenges facing patients and their doctors is keeping an individual's vascular access graft open for dialysis. [AV fistulas](#) remain

the gold standard of access for kidney [dialysis patients](#). They last longer, need less rework and are associated with lower rates of infections, hospitalization and death than other types of access," explained Forauer.

A significant number of patients with chronic kidney failure receive dialysis using synthetic bridge grafts that tend to clot or malfunction, decreasing reliable access for life-sustaining dialysis and causing considerable morbidity, discomfort and inconvenience for dialysis patients, noted Forauer. "AV fistulas are underutilized in the United States yet they are best for keeping blood vessels open for access so individuals can continue to get their life-saving dialysis," said Forauer.

Researchers studied how 72 patients (36 were 75 years or older) and 36 younger patients (between the ages of 40 and 60) would fare when comparing the patency of AV fistulas. Researchers collected information about the patients' other medical conditions—such as whether they had peripheral arterial disease (PAD) or diabetes, whether they were smokers and whether they used anticoagulant medications—to see how this information would play in the big picture. Elderly patients were more likely to be affected by these conditions; however, their comparison showed no difference in primary, primary assisted, secondary or postinterventional primary patency. "AV fistula patency after intervention does not differ between younger and older patient populations," said Forauer.

Before dialysis can begin, a vascular access, which is the site on a patient's body where blood is removed and returned during dialysis, must be prepared. To maximize the amount of blood cleansed during dialysis treatments, the vascular access—such as an AV fistula—allows continuous high volumes of blood flow. An AV fistula is a connection created surgically by joining a vein and an artery in the forearm that allows blood from the artery to flow into the vein, thus providing access for dialysis. The increased blood flow makes the vein grow larger and

stronger so it can be used for repeated needle insertions. This vascular access provides an efficient way for blood to be carried from one's body to the dialyzer and back without causing discomfort. Once matured, two needles are placed into the vein for dialysis. One needle is used to draw blood and run through the dialysis machine; the second needle returns the cleansed blood.

Interventional radiologists monitor AV fistulas to avoid complications such as infection, blockage from clotting and poor blood flow. Interventional radiologists also keep AV fistulas or other accesses open or unclogged through minimally invasive techniques such as angioplasty or stenting. These interventions are safer, less costly and equally effective, and they improve the quality of life for dialysis patients.

Nationally, there are an estimated 27 million people with [chronic kidney disease](#), and nearly half a million are being treated for kidney failure, requiring dialysis or kidney transplant to live. More than 340,000 individuals receive dialysis treatments three times each week, according to national statistics. Over the past five years, the number of new patients with kidney failure has averaged more than 90,000 annually. Kidneys filter waste from the blood and regulate other functions of the body.

Source: Society of Interventional Radiology

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