

## **Abstract:**

**Background:** The elderly population is the fastest growing segment of the dialysis population. Clinical practice guidelines and Medicare pay for performance policy support arteriovenous fistulas (AVFs) over arteriovenous grafts (AVGs) as the preferred vascular access for dialysis. Older adults have higher rates of AVF non-maturation and primary AVF failure leading to the need for further procedures. Thus, the preferred choice of vascular access in the elderly is unclear. The effects of vascular access placement and endovascular procedures to achieve access functionality on a patient's functional status are unknown. Placement of a dialysis access and the procedures subsequently required to achieve and maintain access functionality could result in further declines of function in this already frail population and potentially reduce quality of life.

**Methods:** A pilot, single-center, randomized trial of 90 subjects to evaluate complication rates and functional status decline in subjects age 70 years and older referred for vascular access placement. Subjects will be randomized to AVF (n = 45) versus AVG (n = 45), placed in a vascular access monitoring protocol, and undergo measurements of gait speed, grip strength, and self-reported function over 6 months. The primary hypothesis to be tested is that AVF placement will result in a higher proportion of primary access failure as defined by a composite primary endpoint of a clotted access or an immature access or a non-functional access measured at 6 months compared to AVG placement. In addition, the study will evaluate whether AVF placement and a greater number of access procedures will result in a greater decline in functional status as measured by the mean change over 6 months in gait speed, grip strength, and self-reported function as assessed by the Disabilities in Arm, Shoulder and Hand Survey.

**Conclusion:** We have brought together experts in nephrology, vascular surgery, geriatrics, ageing research and occupational therapy to collaborate on this study. Through this collaboration, we are able to approach the question of the preferred vascular access in the elderly population with the multi-disciplinary approach it requires. Given the high incidence rates of end stage renal disease in the elderly population in the U.S., and that policy currently supports only AVF as the preferred vascular access, this study has the potential to fundamentally change clinical practice in nephrology.