

# AMERICAN SOCIETY OF NEPHROLOGY—ASP—JUNIOR DEVELOPMENT AWARD IN GERIATRIC NEPHROLOGY

## *Award Recipient:*



JONATHAN SEGAL, MD  
UNIVERSITY OF MICHIGAN MEDICAL SCHOOL

### PROJECT:

REDUCING THE VASCULAR ACCESS MORBIDITY FOR  
ELDERLY PATIENTS ON HEMODIALYSIS

### MENTORSHIP TEAM:

AKINLOLU OJO, PHD, MD

MARK SUPIANO, MD

*F*or patients on hemodialysis, maintaining a patent vascular access remains an enormous challenge. In the general hemodialysis population, autologous arteriovenous fistulae (AVF) are preferred over prosthetic arteriovenous grafts (AVG) for vascular access as they have superior patency rates, a lower risk of infection, and may even be associated with lower mortality. However, placement of AVF in elderly patients remains controversial, as poorer patency rates have been reported in this patient population. The long-term goal of this project is to reduce the vascular access morbidity for elderly patients on hemodialysis and, specifically, to examine the hypothesis that the use of AVG may have similar patency rates as AVF in this population.

The most common cause of vascular access failure is venous intimal hyperplasia leading to stenosis and subsequent thrombosis. This process appears to be more aggressive in AVG and likely accounts for the decreased patency rates when compared to AVF. In elderly dialysis patients, this process may be less pronounced than it is in younger individuals. Older dialysis patients, conversely, are more likely to have decreased vascular compliance, diminutive forearm veins, and cardiac disease, which can hinder the successful placement of an AVF. A recommendation for the type of vascular access in elderly dialysis patients pre-supposes an understanding of the factors that affect access outcome in this increasingly prevalent subgroup.

The studies for this project will apply multivariate statistical approaches to pre-existing, internationally representative data from the Dialysis Outcomes and Practice Pattern Study (DOPPS). DOPPS is a prospective, longitudinal study of practice patterns and associated outcomes with detailed information regarding vascular access and co-morbid conditions in over 6,400 chronic hemodialysis patients. If the results of this study demonstrate that the use of an AVG in some elderly patients is equivalent to the use of an AVF, then it may be possible to revise current access planning recommendations to tailor the type of access to specific patient characteristics. If the results favor the use of an AVF regardless of patient age, then additional evidence will be available to the nephrology community to support the use of AVF in even our oldest patients.

During the period of this award, I will complete a master's degree in clinical research design and statistical analysis through the School of Public Health at the University of Michigan. In addition to this didactic program, I will be involved in the development of a curriculum for nephrology fellows that targets the geriatric aspects of the practice. Other aspects of career development include participation in monthly multidisciplinary training conferences and geriatric seminars.