Introduction
• Hospital admissions remain high for vascular access (VA) infection in the first year of hemodialysis (HD).
• The unadjusted rate remains high among incident patients during the early months of dialysis despite a decrease in catheter placements among prevalent patients in recent years.
• While mortality among incident HD patients has been lower among African Americans than whites, little is known about predictive factors behind the elevated first-year VA infectious admission rates.
• We analyzed predictors of hospital admissions for VA infection in the first year of HD.

Methods
• The study cohort included 105,313 U.S. incident HD patients in 2006 and 2007, age 20 and older, who survived the first 90 days of dialysis.
• Included Medicare patients who had a Medical Evidence Form indicating VA access type used on first outpatient dialysis: catheter-only, AV fistula, AV graft, or catheter/maturing internal access.

Results
• Admissions for VA infection were identified from Medicare inpatient claims with an ICD-9-CM principal diagnosis code of 996.6, 996.62.
• Adjusted admission rates for VA infection were computed by race, age, and months from initiation, and adjusted for gender, primary diagnosis, and initial VA type.
• A model-based adjustment method was used with an interval Poisson model and incident dialysis patients, 2005, as the reference cohort.
• Predictors of admission for VA infection in the first year of HD were analyzed with Cox proportional hazards regression models:
  • Patients with a bridge hospitalization spanning day 90 were excluded (n=100,409).
  • Patients were followed from day 90 after initiation until first admission for VA infection, censoring at death, loss to follow-up, payer change, three days prior to transplant, or after one year.
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• Among patients age 20-44, there were higher percentages of males (59.9%), African Americans (49.0%) and patients with a catheter only as an initial access type (66.1%) compared to the older age groups (Table 1).
• Among age and race groups, the highest percentage of patients with only a catheter as initial VA type was found among 20-44 year-old African Americans (67.9%; Fig. 1).
• Adjusted admissions for VA infection were highest among African Americans compared to whites and other races within each age and interval (Fig. 2).
• The highest admission rates for VA infection were among 20-44 year-old African Americans in months 1-3 after initiation (440 admissions per 1,000 patient years; Fig. 2).
• African Americans had significantly higher adjusted risk of admission for VA infection than whites (HR=1.12; 95% CI 1.07-1.17) and other races had lower risk (HR=0.88, 0.79-0.97; Fig. 3).
• Patients age 20-44 had significantly higher risk than age 75 and older (HR=1.44; 1.41-1.47; Fig. 3).
• Other factors associated with higher risk included diabetes as primary cause and catheter-only as initial VA type (AV fistula versus catheter only, HR=0.82; 0.80-0.84; Fig. 3).
• African Americans age 20-44 had significantly higher adjusted risk (P<0.05) than other age and race groups except whites age 20-44 (Fig. 4).

Conclusions
• Despite lower overall mortality rates, African Americans had high first-year admissions for VA infection, and catheter use may be a contributing factor.
• Vascular access infectious admission rates were especially high among younger (age 20-44) African Americans, and this association persisted even after adjustment for initial VA type.
• Results suggest further study of differential racial impact of infections on subsequent mortality.