

Atherosclerotic Renovascular Disease (ARVD) in the US Medicare Population: Incidence, Risk Factors and Prognosis.

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Few national level studies have examined the clinical epidemiology of atherosclerotic renovascular disease (ARVD), a condition which provides a major management issue in contemporary nephrology practice.

Medicare claims were used to define clinical events using a 5% random sample of the US Medicare population without ARVD in the two years preceding December 31, 1999 (N = 1,084,963), who were then followed until December 31, 2001.

The incidence of new ARVD was 3.7 per 1,000 patient years. Antecedent associations included chronic kidney disease (adjusted hazards ratio AHR, 2.54), hypertension (AHR 2.42), peripheral vascular disease (PVD, AHR 2.00), atherosclerotic heart disease (AHD, AHR 1.70), stroke (AHR 1.36), diabetes mellitus (AHR 1.28) and congestive heart failure (CHF, AHR 1.12), age ≥ 85 (AHR 0.54 vs. 67 to 74), black race (AHR 0.79) and female gender (AHR 0.86). The incidence of de-novo cardiovascular events after incident ARVD far exceeded ($P < 0.05$) those in the general population: AHD, 303.9 vs. 73.5 per 1,000 patient years, CHF 194.5 vs. 56.3, stroke 175.5 vs. 52.9, PVD 258.6 vs. 52.2, renal replacement therapy (RRT) 28.8 vs. 1.3 and death 166.3 vs. 63.3. With interval Poisson regression, adjusted hazards ratios declined ($P < 0.05$) as follows: AHD (6.9 in months 0 to 3, declining to 2.3 in months 9 to 12), CHF (4.8 to 1.6), stroke (4.3 to 1.6), PVD (10.4 to 2.0), RRT (13.4 to 6.1) and death (3.5 to 1.3).

Clinically apparent ARVD is strongly associated with cardiovascular disease, both in the past and in the future, and has a very poor prognosis. Only a minority of patients progress to RRT, which may be partly explained by the high macrovascular disease burden. ARVD may be a far more frequent association rather than cause of renal impairment in patients with CKD.