**Association of Female Gender with Arterial Stiffness in Patients With End-Stage Renal Disease**

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**Objectives**

Cardiovascular mortality remains disproportionately high in patients with end-stage renal disease (ESRD), and arterial stiffness is a strong risk factor for death in these patients. Recent studies have shown that women are at increased risk for death in this population. We explored whether arterial stiffness differed by gender in a diverse cohort of patients on hemodialysis or peritoneal dialysis.

**Methods**

Stable patients on hemodialysis or peritoneal dialysis (N=86) underwent arterial stiffness testing by radial tonometry (SphygmoCor, AtCor Medical). Patients were studied on Tuesday or Wednesday mornings (for patients on hemodialysis, the day after the first dialysis session of the week). Central aortic augmentation index (Aix) was calculated at a standardized heart rate of 75 bpm using a generalized transfer function.

**Results**

The mean±SD age was 54±12 years, 30% were women, 36% were African American, and 38% had diabetes. The median(IQR) years on dialysis was 4(1.8, 7), 80% were on hemodialysis, and 20% were on peritoneal dialysis. Overall, mean±SD Aix was 24±11%; mean±SD Aix was 29±9% for women vs. 21±9% for men (p<0.001). Clinical factors associated with both higher Aix (worse arterial stiffness) and female gender (p≤0.2) included older age, diabetes, lower albumin, lower hemoglobin and higher Kt/V. After adjustment for these covariates, female gender remained a significant correlate of worse arterial stiffness (β=8%;95%CI [-14, -1.7];p=0.01). Further adjustment for peripheral systolic blood pressure, height and weight (parameters used to calculate Aix) did not attenuate this effect (β=9%;95%CI [-15, -3.1];p=0.004).

**Conclusions**

In this ESRD cohort, female gender was associated with higher Aix (worse arterial stiffness) after adjustment for clinical factors. Further studies are needed to explore whether residual confounding explains this association or if hormonal and metabolic factors could lead to worsened arterial stiffness in women with ESRD.