

## **Use of chronic kidney disease to enhance prediction of cardiovascular risk in those at medium risk**

### **ABSTRACT**

Based on global cardiovascular (CV) risk assessment for example using the Framingham risk score, it is recommended that those with high risk should be treated and those with low risk should not be treated. The recommendation for those of medium risk is less clear and uncertain. We aimed to determine whether factoring in chronic kidney disease (CKD) will improve CV risk prediction in those with medium risk. This is a 10-year retrospective cohort study of 905 subjects in a primary care clinic setting. Baseline CV risk profile and serum creatinine in 1998 were captured from patients record. Framingham general cardiovascular disease risk score (FRS) for each patient was computed. All cardiovascular disease (CVD) events from 1998–2007 were captured. Overall, patients with CKD had higher FRS risk score (25.9% vs 20%,  $p = 0.001$ ) and more CVD events (22.3% vs 11.9%,  $p = 0.002$ ) over a 10-year period compared to patients without CKD. In patients with medium CV risk, there was no significant difference in the FRS score among those with and without CKD (14.4% vs 14.6%,  $p = 0.84$ ) However, in this same medium risk group, patients with CKD had more CV events compared to those without CKD (26.7% vs 6.6%,  $p = 0.005$ ). This is in contrast to patients in the low and high risk group where there was no difference in CVD events whether these patients had or did not have CKD. There were more CV events in the Framingham medium risk group when they also had CKD compared those in the same risk group without CKD. Hence factoring in CKD for those with medium risk helps to further stratify and identify those who are actually at greater risk, when treatment may be more likely to be indicated.

**Keyword:** Chronic disease; Kidney disease; Cardiovascular risk