STUDY OF CHRONIC KIDNEY DISEASE IN ANGIOGRAPHICALLY PROVEN CORONARY ARTERY DISEASE

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INTRODUCTION: The presence of chronic kidney disease (CKD) confers a very high risk for cardiovascular morbidity and mortality. The independent association of CKD with coronary anatomy has been understudied so far.

AIMS/METHODS: We evaluated the prevalence and relationship of CKD with angiographically proven Coronary artery disease (CAD) in 1029 subjects in a single centre. Coronary angiogram results and demographics were collected from patient charts. Further data on traditional cardiovascular risk factors including smoking status, diabetes mellitus, history of cardiovascular disease (LVH, IHD, MI, Stroke, TIA, Peripheral vascular disease) and cardio protective drug usage were extracted from the computer database. CKD was defined as those with eGFR $\leq$ 60/min/ 1.73 m^2 based on the creatinine obtained prior to angiography. All those patients with at least 40% or greater coronary arterial stenosis and/or a flow limiting lesion were considered as having CAD. Logistic regression was used to determine whether CKD was independently associated with significant coronary obstruction.

RESULTS: The prevalence of CAD increased progressively with decreasing eGFR --68.3% in patients with eGFR $\geq$ 60/min/ 1.73 m^2, 74.5% in patients with eGFR 60-31 ml/min/ 1.73 m^2, 76.4% in those with eGFR 30 – 15 ml/min/ 1.73 m^2 and 90.9% among patients with eGFR $\leq$ 15/min/ 1.73 m^2 ($p = 0.001$). There was significant increase in the severity of CAD, that is, three vessel disease, obstructive lesions and those needing revascularisation in CKD group than those without CKD (41.6% vs 18% , $p = 0.016$). There was no significant difference in terms of prevalence of cardiovascular risk factors between patients with CKD and CAD and those with normal kidney function and CAD (p = NS). After controlling for traditional risk factors, logistic regression analysis confirmed that CKD was independently associated with the presence of severe CAD ($p = 0.004$).

CONCLUSION: With a reduction in eGFR, there was a significant rise in the prevalence of CAD. Severity of CAD needing revascularisation was increased in patients with a progressive decline in eGFR. Presence of CKD was independently associated with the presence of severe CAD.