

Renal Dysfunction In Acute Coronary Syndrome

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Background

The association of coronary artery disease (CAD) and chronic kidney disease (CKD) is well established. There is paucity of information relating CKD in acute coronary syndromes (ACS). Low GFR detection at one point testing may be due to CKD or acute renal insult which may be reversible.

Aim

We want to study the incidence of low GFR in ACS patients as it has an effect in the management of ACS patients (like adjustment of drugs depending on the renal status and precaution about CIN- contrast induced nephropathy, during primary or rescue PCI).

Materials and methods

Hundred patients who were admitted to Osmania general hospital with ACS without any previous history of CKD over 2 months were included in the study. This study is the sub group analysis of the study on "Importance of red blood cell distribution width in Indian patients with acute coronary syndrome". In all these patients detailed clinical history including coronary risk factors were noted. In addition, in all these patients glomerular filtration rate (GFR) was calculated using MDRD formula. If GFR value is $>61 \text{ ml/min/1.73 m}^2$, then it is considered normal. If GFR value is $\leq 60 \text{ ml/min/1.73 m}^2$, then it is considered low.

Results

Out of 100 ACS patients, 28 patients had Low GFR. So, in ACS, Low GFR incidence is 28%. The 3 major known risk factors for CKD in CAD are Hypertension, Diabetes mellitus and decreased LV function. Hypertension was present in 37 patients (51.3%) of normal GFR ACS group vs. 13 patients (46.4%) in Low GFR ACS group (p value=0.3). Diabetes mellitus was present in 35 patients (48.6%) of normal GFR ACS group vs. 10 patients (35.7%) in Low GFR ACS group (p value=0.1). Decreased LV function was present in 35 patients (48.6%) of normal GFR ACS vs. 14 patients (50%) of Low GFR ACS ($p=0.1$). These known risk factors for CKD like hypertension, diabetes mellitus (these two diseases are also known risk factors for CAD) and decreased LV function were more frequent in normal GFR ACS group (72 patients) than Low GFR ACS group (28 patients), which are not statistically significant. It implies that Low GFR in ACS is not due to the presence of risk factors for CKD. This may be due to undetected underlying CKD or acute renal insult which is probably related to the systemic effect of ACS (may be generalized vasoconstriction) which requires further studies.

Conclusions

Very high incidence of Low GFR is present in ACS CAD patients, which requires special attention as it alters the drug dosage adjustment and contrast induced nephropathy during invasive management of ACS.