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Non-traditional cardiovascular risk factors in chronic kidney disease (CKD) and haemodialysis dependent patients- A case control study

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Background: Mortality rate is 10-20 times higher among patients with end stage renal disease, compared with general population, with 50% of this excess burden being attributable to cardiovascular disease. This excess risk is not entirely explained by elevation of traditional risk factors. Elevation of Several Non-traditional risk factors is associated with an increased risk for cardiovascular disease in CKD (not on dialysis) and haemodialysis dependent patients. .

Methods: 48 pre-dialysis CKD, 22 Heamodialysis dependent patients and 26 healthy controls were included in the study. Non-traditional risk factors homocysteine, fibrinogen, C-reactive protein (CRP), factor VII activity and haemoglobin were estimated and compared with normal control population..

Results: Homocysteine was 15.38 ± 5.06, 27.30 ± 31.12, 23.76 ± 9.15 µmol/L in control , pre-dialysis CKD and haemodialysis dependent patient respectively. Fibrinogen in control , pre-dialysis CKD and haemodialysis dependent patient was 180.25 ± 40.64, 264.10 ± 67.81, 259.59 ± 60.92mg/dl respectively. CRP in control, pre-dialysis CKD and haemodialysis dependent patient was 3.90± 1.03 52.59 ± 82.16, 17.31 ± 18.42 mg/L respectively. Factor VII activity in control was 94.18 ± 12.66, in pre-dialysis CKD 103.97 ± 14.41 and haemodialysis dependent patient 106.18 ± 14.64. Haemoglobin was in control 13.85 ± 1.59gm/dl, pre-dialysis CKD 8.08 ± 1.94 gm/dl, Haemodialysis dependent patients 9.46 ± 1.87gm/dl. Cardiovascular disease in pre-dialysis CKD was 54.56% and haemodialysis dependent patients 59.4%. Compared to control both in pre-dialysis CKD and haemodialysis dependent patients homocysteine , fibrinogen , CRP, factor VII were significantly increased and haemoglobin was significantly low .

Conclusions: Non traditional risk factors may be responsible for increased incidence of cardiovascular disease in pre-dialysis CKD and haemodialysis dependent patients.

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