

PULMONARY HYPERTENSION IN HEMODIALYSIS PATIENTS AND ITS ASSOCIATION WITH OXIDATIVE STRESS AND INFLAMMATION

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Pulmonary hypertension (PH) has been described in chronic kidney disease stage 5D (CKD5D) patients on hemodialysis (HD) and has been associated with increased morbidity and mortality. Our objective was to determine the prevalence of PH in patients on HD and its association with oxidative stress and inflammation.

Methodology: After ethical committee clearance, we conducted a cross-sectional study on CKD5D patients at a tertiary care center from 1st June 2016 to 31st May 2017. Patients who are on maintenance HD for at least 3 months were included. Demographic, clinical, biochemical and trans-thoracic echocardiography details were collected. PH was defined as, estimated mean pulmonary artery pressure (mPAP) greater than 25 mm Hg at rest. PH was further divided into mild (mPAP b/w 25-40mmHg), moderate (mPAP b/w 40-60mmHg) and severe PH (mPAP > 60mmHg). C Reactive protein (CRP) was done as a marker for inflammation and Malonyl dialdehyde (MDA) and Thiol assay (THOL) were done as markers of oxidative stress. Data were analyzed using SPSS 16.

Out of 52 patients, 28 had PH (24 had mild, 4 had moderate, and none had severe PH) with a prevalence of 54 % in our CKD 5D patients (Figure 1). PH patients had significant TR (0.001) and MR (0.002) compared to patients with no PH. No clinical or biochemical factors ($p > 0.05$) including oxidative stress (Thiol and MDA) or inflammation (CRP) had any significant association with occurrence of PH in our population (table 1).

Conclusion: ESRD patients on HD have high prevalence of PH. Dialysis vintage, ultrafiltration, presence of co-morbidities, oxidative stress or inflammation did not had any influence on prevalence of pulmonary hypertension in our population.

Key Words and abbreviations: ESRD = End stage renal disease, PH = Pulmonary hypertension, HD = Hemodialysis, CKD5D = Chronic kidney disease stage 5 on maintenance hemodialysis. mPAP= estimated mean pulmonary artery pressure