

A Prospective Study of Pulmonary Hypertension in Patients with Chronic Kidney Disease: A New and Pernicious Complication

Abstract

Pulmonary hypertension (PH) is a recently recognized complication of chronic kidney disease (CKD), especially in end-stage renal disease. It has prevalence estimates of 30%–50% and is an independent predictor of increased mortality in CKD patients. The aim of this study is to analyze the prevalence of PH in patients with CKD, its severity in different stages of CKD, and risk factors for it. One hundred and eight patients with CKD treated at Karnataka Institute of Medical Sciences, Hubli, Karnataka, between January 1, 2014, and June 30, 2015, were selected. Clinical evaluation and relevant investigations including echocardiography were done. Follow-up echocardiography was done at 3 and 6 months and assessed. The mean age of studied population was 43.53 ± 14.63 years. Sex ratio was 2.72:1 (male:female). PH was present in 47 of 108 (43.5%) cases at beginning, 41 of 83 (49.14%) at 3 months, and 32 of 64 (50%) at 6 months. The prevalence and severity of PH increased with progression of CKD stage, although not statistically significant. Heart failure with reduced ejection fraction and heart failure with preserved EF were significantly higher among PH group compared to non-PH group ($P < 0.01$). Mean hemoglobin in PH group was significantly lower, compared to non-PH group ($P < 0.01$). Mean interdialytic weight gain and central venous pressure were higher among PH group than non-PH group. Higher calcium phosphate product ≥ 50 was more prevalent in PH group than in non-PH group. The majority of them had moderate PH at the beginning of the study which remained same, despite being on hemodialysis. PH is a common complication in CKD patients with prevalence of 43.5%–50%. Left-sided heart failure, anemia, fluid retention, and increased calcium phosphate product are the risk factors for developing PH.

Keywords: Calcium phosphate product, chronic kidney disease, ejection fraction, pulmonary hypertension

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