

Pulmonary Hypertension in Patients with Chronic Renal Failure

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Abstract

Background: Pulmonary hypertension (PH) comprises a group of clinical and pathophysiological entities with similar features but a variety of underlying causes. Many etiologies causing PH have been reported, and one of the background disease seen with patients with PH is chronic renal failure (CRF).

Objective: To evaluate the prevalence of pulmonary hypertension in patient with chronic renal failure in predialysis state and in uremic patients undergoing hemodialysis

Patients and methods: One hundred patients had complaining chronic renal failure. 50 patients on conservative treatment and 50 patients on hemodialysis evaluated clinically and by echocardiography for the presence of pulmonary hypertension

Results: The prevalence of pulmonary hypertension >35 mmHg was found in 33% of patients with chronic renal failure. the patients

with pulmonary hypertension had significantly lower albumin and arteriovenous fistula and long duration of dialysis

Conclusion: This study demonstrated that 42% of patients with chronic renal failure receiving regular hemodialysis have pulmonary hypertension and 24% of patients with chronic renal failure in predialysis have pulmonary hypertension.

The presence of pulmonary hypertension was related to the low level of albumin, presence of arteriovenous fistula and long duration of hemodialysis.

Keywords: Pulmonary hypertension, hemodialysis, predialysis, echocardiography.

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Introduction

Pulmonary hypertension is characterized by elevated pulmonary arterial pressure and secondary right ventricular failure. It is life threatening condition with a poor prognosis if untreated. pulmonary hypertension is defined as a mean pulmonary pressure greater than 25 mmHg at rest or 30 mmHg with exercise as measured by right heart catheterization⁽¹⁾.

Pulmonary hypertension (PH) comprises a group of clinical and pathophysiological entities with similar features but a variety of underlying causes. Many etiologies causing PH have been reported, and one of the background disease seen with patients with PH in chronic renal failure (CRF).

however, the pathogenesis of pulmonary hypertension (PH) in this group of patients is not explained satisfactorily⁽²⁾.

Chronic hemodialysis patients are exposed to continuous pulmonary insults of multifactorial origin. there are several explanations for the development of pulmonary arterial pressure (PAP) in CRF. High cardiac output (CO) resulting from the arteriovenous fistula (AVF) may increase pulmonary artery pressure (PAP)⁽³⁾.

Metabolic and hormonal derangements caused by chronic renal failure may lead to pulmonary arterial vasoconstriction. Moreover, pulmonary calcification in chronic dialysis patients has been associated with pulmonary dysfunction. Besides, fluid overload and anemia may cause PH. Since 1966, arteriovenous fistula (AVF), developed by Brescia and Cimino, has provided the best vascular

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