

만성콩팥병과 말기신부전 환자에서의 폐동맥고혈압

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Pulmonary Hypertension in CKD and ESRD Patients

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It has been well known that pulmonary hypertension (PH) is associated with excess mortality and morbidity in other population without chronic kidney disease. But, during the general care of CKD patients the prevalence and importance of PH is relatively underestimated and sometimes neglected. Pulmonary hypertension is increasingly recognized in patients with chronic kidney disease on dialysis. A high prevalence of PH in CKD patients on hemodialysis has been reported. Like CKD patients on maintenance HD, patients on maintenance peritoneal dialysis also have high prevalence of PH and associated with increased mortality.

Mordechai Yigla, reported that almost 40% of patients undergoing long-term HD via an arteriovenous access had unexplained PH. The pathophysiology of PH in CKD patients on HD is related with arteriovenous fistula. AV access related large amount of venous return result in increase in pulmonary circulation and cardiac output. Increased pulmonary vascular resistance or diminished vasodilatory response to the increased cardiac output may be the reasons of PH in CKD. This diminished pulmonary vasodilatory response could result from pulmonary calcification, increased pulmonary vascular resistance and RV hypertrophy. Endothelin-1, a potent vasoconstrictor, is involved in primary and secondary PH. This ET-1 activity is increased in patients with PH receiving HD.

Large number of patients with CKD have functional abnormality of pulmonary circulation. AV-access related high cardiac output cause increase in pulmonary circulation. But, pulmonary circulation cannot compensate adequately for the high cardiac output which result in pathologic elevation in PAP. Long-term PH is certainly associated with anatomical remodelling in the pulmonary capillaries and RV, with increased morbidity and mortality. So nephrologist should keep an eye on regular monitoring of Doppler echocardiographic PAP measurement and AV access flow.