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Acute kidney injury, its risk factors, and mortality in chronic obstructive pulmonary disease patients

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Objectives : Chronic obstructive pulmonary disease (COPD) is an inflammatory airway disease and a major cause of illness and death throughout the world. Inflammation is known to play a major role in the pathophysiology of AKI. We evaluate the impact of acute kidney injury (AKI) on mortality and risk factors for AKI in patients with COPD.

Methods : We retrospectively enrolled patients who hospitalized due to COPD acute exacerbation between January 2011 and April 2014. We categorized patients into two groups: with AKI and without AKI. We evaluated factors associated with AKI and effect of AKI on all-cause mortality.

Results : Among the 177 patients, 41 patients (23.2%) had AKI and 30 patients (16.9%) died during follow up period. Patients with AKI tend to lower blood pressure, lower estimated glomerular filtration rate (eGFR) and received invasive mechanical ventilation (MV) at the time of admission. Older age, lower BMI, lower eGFR level, diabetes and AKI were significantly associated with all-cause mortality. In addition, lower eGFR level, diabetes, invasive MV and presence of pneumonia were significantly associated with AKI.

Conclusions : The prevalence of AKI is relatively high in COPD patients and AKI is independent factor of the all-cause mortality. Thus, close monitoring and prevention for AKI is important in COPD patients.

Keywords : chronic obstructive pulmonary disease; acute kidney injury