

급성 신손상이 동반되는 패혈증 환자의 특성

고려대학교 안암병원 신장내과¹, 서울을지병원 신장내과²

조은정¹, 이지현², 유승기², 오세원², 조원용¹, 김형규¹, 조상경¹, 이소영²

Characteristics of Patients Compromised with Acute Kidney Injury with Sepsis

Eunjung Cho¹, Ji-hyun Lee², Seung-Ki Yoo², Se-won Oh²
Won Yong Cho¹, Hyung-Kyu Kim¹, Sang-Kyung Jo¹, So-young Lee²

Korea university Anam Hospital Department of Internal Medicine Division of Nephrology¹
Seoul Eulji Medical Center Department of Internal Medicine Division of Nephrology²

Introduction: Acute Kidney Injury(AKI) is a major complication in patients with sepsis and is an independent predictor of mortality. However, the pathogenesis leading to AKI or characteristics determining the development of AKI in septic patients are still unknown. This study aimed to evaluate the distinguishing clinical and biochemical characteristics for the accompaniment of AKI in patients with sepsis.

Methods: We prospectively enrolled patients older than 18 years who admitted to Eulji medical center with the diagnosis of SIRS or who developed SIRS during hospitalization associated with infection, from January 2010 to December 2011. Patients were divided in two groups depending on the presence of AKI according to RIFLE criteria, and their clinical characteristics were compared. To investigate the relationship between inflammatory/immune response and the development of AKI, serum and urine were collected to measure IL-6, IL-10 and soluble CD25, a marker of immunosuppressive regulatory T cells.

Results: Of 62 patients, 16 (25.8%) were male and 45 (72.5%) had bacteremia. These patients with SIRS were divided into two groups: 44 patients with AKI and 18 patients without AKI. The percentage of having hypertension, diabetes, and cancer were not different in both groups, but baseline eGFR was significantly lower and APACHE II score was higher in patients with AKI. They also had significantly higher level of FeNa and LDH. Although serum inflammatory cytokines (IL-6, IL-1b, IL-8) was increased in AKI group, only IL-8 showed significance and anti-inflammatory cytokine, IL-10, was also significantly increased in AKI group. Further, the level of serum soluble CD25, the marker of T reg cells, was significantly increased in patients with AKI ($p < 0.05$), suggesting the association of paradoxical immune suppression and the development of AKI. Serum and urine NGAL, known as a marker of kidney injury, were significantly higher in patients with AKI. In-hospital mortality was 8 (18.6%) in AKI group and 1 (5.5%) in non-AKI group ($p = 0.259$).

Conclusion: Our study shows that the development of AKI was independently associated with the presence of chronic kidney disease in patients with sepsis. Significantly increased soluble CD25 level in patients with AKI might suggest the presence of possible link between paradoxical immune suppression and the development of organ dysfunction in sepsis.

Key Words: 급성 신손상, 패혈증, 조절 T세포

Acute kidney injury, Sepsis, Regulatory T cell