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Incidence, risk factors and prognosis of acute kidney injury in hospitalized acute cholangitis patients.

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Objectives: Acute cholangitis is life-threatening disease that results from sepsis and biliary obstruction. It causes acute kidney injury(AKI) and is associated with disease severity. The purpose of our study was to investigate the association between AKI and severity grading of acute cholangitis.

Methods: We conducted a single center, retrospective study and enrolled 1496 patients diagnosed with acute cholangitis from January 2011 to December 2018. The severity of the disease was classified according to the Tokyo guidelines 2018(TG18) of acute cholangitis, and the relationship between severity and AKI was analyzed. In addition, the progression to chronic kidney disease(CKD) due to renal damage was considered.

Results: In our study 332 of 1496 patients (22.2%) had AKI and median age was 73 years. According to the TG18 classification, it was divided into three groups (Grade I~III), and as the disease severity increased, the higher incidence rate of AKI was observed(10.0%, 28.3%, 61.4%, $p < 0.001$). The AKI group showed hemodynamic instability by presenting higher quick sepsis related organ failure assessment(2(1-2) vs. 1(0-1), $p < 0.05$), lower mean arterial pressure(73.3 [70.0-83.3] vs. 93.3 [83.3-98.3], $P < 0.001$) than the non-AKI group. There was a statistically significant increase in CKD progression in AKI group(27.6% vs. 17.7%, $p < 0.001$).

Conclusions: The development of AKI in acute cholangitis affects the clinical course, but also the long-term prognosis of the patient.