**Background and Aims:**
Acute kidney injury (AKI) is common and serious complication in critically ill patients in intensive care unit (ICU). The rapid increase in aging populations with more comorbidities contribute to high incidence AKI in ICU. Incidence varies from 20% to as high as 70%. AKI in the ICU frequently requires costly supportive therapies, has high morbidity and it’s associated with poor outcomes.

We aimed to determine incidence of AKI causes, risk factors, treatment and outcomes of AKI in critically ill patients in ICU.

**Method:** We collected data prospectively from case records of adult patients (older than 18 years of age) admitted to the ICU at the Department of Internal medicine, Emergency Center, Clinical center of Vojvodina in Novi Sad, Serbia, during 3 months. We included patients who had at least two measurements of serum creatinine. Data on patient demographics, diagnosis at the time of ICU admission, complete blood count, biochemistry, comorbidities (diabetes mellitus, arterial hypertension, other cardiovascular diseases, renal disease, prostate diseases, dehydration, burns, gastrointestinal bleeding, pancreatitis, peritonitis, sepsis), use of nephrotoxic agents, radiological procedures and treatment of AKI were recorded. We excluded patients with chronic renal disease who were on hemodialysis. There were no interventions.

**Results:** Of the 44 patients included in the study, median age was 67 +/- 13.20 years (range: 21 to 88). Of those 44 patients 20% developed AKI. De novo AKI was diagnosed in 51.22% of those patients and 48.78% had chronic renal failure in acutisation. The most frequent etiology was pre-renal, in 60.95% of patients. Renal origin and obstructive (post-renal) causes were detected in the same number of patients, 9.52%. Comorbidities were present present in all patients. Most common comorbidity was arterial hypertension, in 52.4% of patients, other cardiovascular diseases in 47.6 % of patients, sepsis also in 47.6% of patients and gastrointestinal bleeding in 33.3% of patients. Complete recovery of kidney function was detected in 42.86% of patients. Mortality was 28.57%. During the hospitalisation 90.48% of patients were treated conservatively and 9.52% of patients required renal replacement therapy.

**Conclusion:** De novo AKI occurred in approximately half of the critically ill patients in ICU. The most frequent etiology was pre-renal. AKI was mainly detected in older patients with comorbidities. Age and comorbidities were also associated with the poor outcome. Mortality was high.