

MO380 INCREASED PREVALENCE OF ACUTE KIDNEY INJURY AND MORTALITY IN COVID-19 HOSPITALIZED PATIENTS

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BACKGROUND AND AIMS: In 2020, SARS-CoV-2 pandemic had a devastating impact on individuals and on national health systems worldwide. Although being primarily a lung disease, COVID-19-associated systemic inflammation and activation of coagulation/complement cascades lead to multiple organ dysfunction including Acute Kidney Injury (AKI).

Our aim is to evaluate AKI prevalence and mortality in hospitalized patients during COVID-19 pandemic in a 500-bed University Hospital.

METHOD: Observational study on 945 COVID-19 patients (March-May 2020). Data collection from Board Hospital Discharge and serum creatinine (Lab database). AKI stratification in accordance to KDIGO criteria and evaluation of outcome in the different subgroups. The same methodology was adopted to assess AKI prevalence and outcome in 2018-2019.

RESULTS: 351/945 (37.14%) of all hospital admissions for COVID-19 showed AKI further sub-classified as follows: 173 (18.3%) stage 1, 112 (11.9%) stage 2 and 66 (6.9%) stage 3: the control NO AKI group was 594/945 (62.86%). COVID-associated AKI prevalence was higher than that observed in 2018 (total AKI 17.9%, stage 1 10.7%, stage 2 4.5%, stage 3 2.7%) and 2019 (total AKI 17.2%, stage 1 10.1%, stage 2 4.5%, stage 3 2.6%).

During COVID-19 pandemic, in-hospital mortality was 27% for NO AKI group, 28% for total AKI group, further subdivided 24% for stage 1, 45% for stage 2 and 42% for stage 3 group, respectively. Mortality was different from that observed during 2018 (NO AKI 3.77%, total AKI 15.2%, stage 1 9.69%, stage 2 17.24%, stage 3 18.9%) and 2019 (NO AKI 3.56%, total AKI 18.35%, stage 1 10.6%, stage 2 20.1%, stage 3 24.3%). In COVID-19 patients, mean age of NO AKI group was 64.6 ys vs. 71.7 ys of total AKI group divided in 71.6 ys for stage 1, 74.3 ys for stage 2 and 67.9 ys for stage 3, respectively. Mean eGFR at admission was 74.2 ml/min for NO AKI group, 61.3 ml/min for total AKI group divided in 64.3 ml/min for stage 1, 57.8 ml/min for stage 2 and

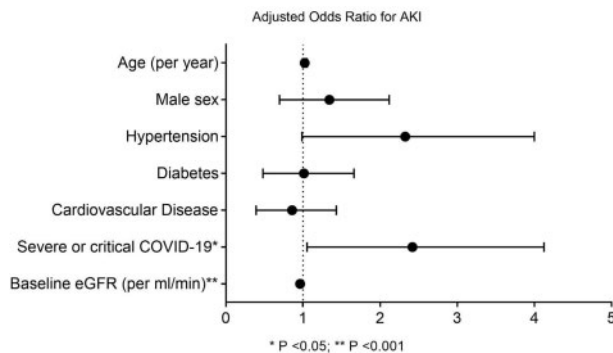
52.5 ml/min for stage 3. Mean serum creatinine at admission was 1.17 mg/dl in NO AKI group, 1.43 mg/dl for total AKI group divided in 1.22 mg/dl for stage 1, 1.4 mg/dl for stage 2 and 2.25 mg/dl for stage 3.

Among evaluated comorbidities, only diabetes (p=0,048) and cognitive impairment (p=0,001) were associated with a significant increased risk for AKI development. ICU admission rate was 5% for NO AKI group and 18% for total AKI group divided in 14% for stage 1, 22% for stage 2 and 44% for stage 3.

Mean length of hospital stay for NO AKI group was 7.22 days vs 15.08 days for total AKI group divided in 13.67 for stage 1, 15.83 for stage 2 and 21.82 for stage 3.

Of note, all different therapies administered to COVID-19 patients did not correlate with AKI incidence.

Mean eGFR at discharge was 76 ml/min for NO AKI group vs 66 ml/min for total AKI group divided in 68.7 ml/min for stage 1, 59.3 ml/min for stage 2 and 59.3 ml/min for stage 3. Mean serum creatinine at discharge was 1.14 mg/dl for NO AKI group vs 1.45 mg/dl for total AKI group divided in 1.28 mg/dl for stage 1, 1.58 mg/dl for stage 2 and 2.05 mg/dl for stage 3.



CONCLUSION: COVID-19 pandemic is associated with an increased AKI prevalence in hospitalized patients (2-fold increase in all KDIGO stages). AKI associated with an increased risk of mortality: of note, AKI stage 2-3 had a strong impact on mortality in comparison to NO AKI group (OR 2.59 and 2.11, respectively). The presence of eGFR >60 ml/min and serum creatinine < 1.2 mg/dl at admission were associated with a lower risk of AKI development: reduced eGFR levels were observed at discharge particularly in AKI stage 2-3. The length of hospital stay and risk of ICU admission depended on AKI incidence and severity.

COVID-19 lead to an increased burden for Nephrologists due to increased AKI prevalence: a nephrological follow-up is needed to avoid progression from AKI to chronic kidney disease (CKD).