FC047

COMPARISON OF THE CHARACTERISTICS AND MORTALITY OF ACUTE KIDNEY INJURY IN PATIENTS WITH COVID-19 AND OTHER RESPIRATORY INFECTIONS: A PROSPECTIVE COHORT STUDY

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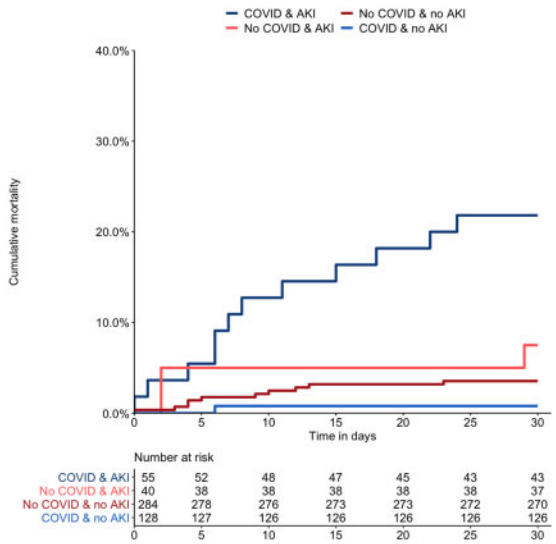
BACKGROUND AND AIMS: Previous studies have indicated a coherency between coronavirus disease 2019 (COVID-19) and acute kidney injury (AKI), indicating poor outcomes. However, most studies only included patients with COVID-19 and lacked a control group. Therefore, the aim of this study was to investigate the prevalence and prognostic impact of AKI in patients with COVID-19 in comparison with other respiratory tract infections.

METHOD: The prospective single-center observational case-control COronaVIrus surviVAl (COVIVA, clinicaltrials.gov NCT04366765) study performed at the University Hospital Basel Switzerland consecutively enrolled patients presenting to the emergency department with symptoms suggestive of COVID-19 between March 23 and May 31, 2020. The final diagnosis that led to the inclusion in the study was adjudicated by physicians after reviewing all available medical data including laboratory test results 30 days after discharge. For this analysis, we compared patients tested positive for SARS-CoV-2 with patients tested negative but with an adjudicated diagnosis of upper or lower respiratory tract infection including pneumonia. Primary outcome measure was death at 30 days, secondary outcomes were AKI incidence, renal recovery and need for renal replacement therapy. AKI was defined according to the serum creatinine criteria of the 2012 KDIGO clinical practice guideline.

RESULTS: Of the 1086 patients included, 507 had a final adjudicated diagnosis of respiratory tract infection and were eligible for this analysis. Of those, 183 (36%) had a positive PCR swab test for SARS-CoV-2. Baseline characteristics were comparable between patients with and without COVID-19.

AKI occurred in 95 patients (19%) with a higher incidence (30%, 95%CI 24-37 versus 12%, 95%CI 9-17, p<0.001) and a higher severity (KDIGO stage 3, 22% versus 10%, p=0.003) in patients with COVID-19 as compared to controls, respectively. Need for intensive care (22% versus 6%, p<0.001) and requirement for RRT were higher in patients with COVID-19 (8 patients (4.4%) versus 2 patients (0.62%); p=0.01). Renal recovery at discharge in survivors was similar in patients with (64%) and without COVID-19 (48%, p=0.175). Survival analysis identified AKI as a predictor of 30-day mortality independent of COVID-19 status (adjusted hazard ratio (aHR) 3.44, 95% confidence interval (CI) 1.55-7.63, p=0.002), but COVID-19 patients with AKI carried the highest risk (aHR 4.24, 95%CI 1,82-9.88, p<0.001). (Figure 1)



CONCLUSION: AKI occurs more frequently and more severely in patients with COVID-19 compared to other respiratory tract infections. It is associated with an increased risk for death, with the highest risk observed in COVID-19 patients. This underlines the augmented burden of AKI during the COVID-19 pandemic.