

# COVID-19 PANDEMIC AS A RISK FACTOR FOR DEVELOPING AKI: A MONOCENTRIC EXPERIENCE

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**Objective:** evaluation of AKI prevalence and its associated-outcomes in all hospitalized patients during the COVID-19 pandemic at "Maggiore della Carità" University Hospital in Novara.

**Methods:** we performed an observational study based on data concerning patients admitted to our hospital between March and May 2020. We collected data from Board Hospital Discharge (BHD) and serum creatinine from the Lab data base. We performed AKI stratification in accordance to KDIGO criteria and we evaluated the outcome of different groups.

**Results:** we observed that 37,14% of all hospitals admissions showed the presence of AKI: indeed, we identified 351 AKI events COVID19-correlated; further sub-classified as follows: 173 AKI stage 1, 112 AKI stage 2 and 66 AKI stage 3. Mean age for no-AKI group was 64.6 ys, 71.6 for AKI stage 1, 74.3 for AKI stage 2 and 67.9 for AKI stage 3. Among the comorbidities evaluated only diabetes ( $p=0,048$ ) and cognitive impairment ( $p=0,001$ ) showed a significant difference for AKI development. Mean eGFR at admission was 74.2 ml/min for no-AKI group, 64.3 ml/min for AKI stage 1, 57.8 ml/min for AKI stage 2 and 52.5 ml/min for AKI stage 3. The mean length of stay for no-AKI group was 7.22 days, 13.67 for AKI stage 1, 15.83 for AKI stage 2 and 21.82 for AKI stage 3. ICU admission rate was 5% for no-AKI group, 14% for AKI stage 1, 22% for AKI stage 2 and 44% for AKI stage 3. In-hospital mortality was 27% for no-AKI group, 24% for AKI stage 1, 45% for AKI stage 2 and 42% for AKI stage 3 group.

**Conclusion:** AKI during the COVID19 pandemic impacts a large part of our admissions, with a higher prevalence in comparison to the epidemiological studies which we performed in 2018-2019: 37,14% against 17% and 18% respectively. In contradiction to the general characteristics of AKI patients, we did not observe a higher prevalence in elderly people and in patients with pluri-comorbidities. The presence of higher eGFR at admission could seem to be protective for AKI development. The length of stay could seem to be dependent to AKI severity. ICU admission could seem to be linked to AKI development. AKI stage 2 and stage 3 seemed to have a strong impact on mortality in comparison to the no-AKI group (OR 2.59 and 2.11 respectively against OR 0.27).

Logistic Regression Model for in-hospital death		
	OR	IC
Age	4,93	3,69-6,57
eGFR at admissions	0,2	0,15-0,26
Cr <sub>s</sub> at admissions	1,26	0,15-0,26
Absence of AKI (no AKI group)	0,73	0,55-0,97
Length of stay	0,69	0,57-0,83
AKI stage 1	0,94	0,63-1,4
AKI stage 2	2,59	1,67-4,01
AKI stage 3	2,11	1,23-3,6

38<sup>th</sup> Vicenza Course on AKI&CRRT  
a week of virtual meetings

2-6 November 2020