EPIDEMIOLOGY OF ACUTE KIDNEY INJURY IN NOT ICU ADMITTED PATIENTS FOR COVID-19 INFECTION

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Background. COVID-19 is a systemic disease that involves the kidney since SARS-CoV-2 has a high kidney tropism. The aim of this study was to describe the epidemiology, risk factors and outcomes of acute kidney injury (AKI) in patients hospitalized for Covid-19 in a General Medicine COVID-Units. Critically ill patients requiring mechanical ventilation were excluded because our aim was to evaluate virus-related kidney damage without intubation *sequelae*.

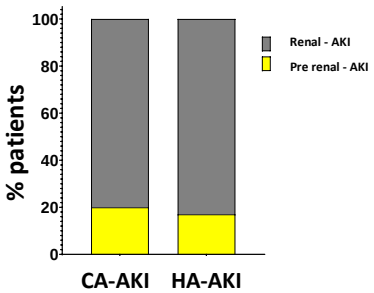
Methods. A retrospective cohort study was performed on all patients hospitalized for COVID-19 in Pavia San Matteo Hospital COVID-Units from March 2020 until June 2020. AKI was diagnosed according to KDIGO 2012 guidelines and patients were categorized as having pre-renal or renal AKI if FENa was < 1% or >1%. Community-acquired AKI (CA-AKI) was defined as patients whose admission serum creatinine met KDIGO criteria, while hospital-acquired AKI (HA-AKI) was defined as an increase in serum creatinine that occurred twenty-four hours or longer after hospitalization. Demographic, laboratory and clinical outcome variables were extracted by chart review.

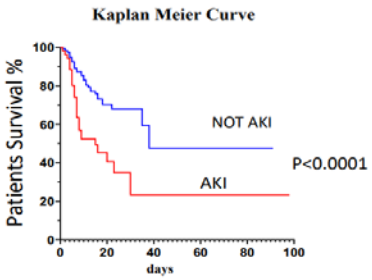
Results. AKI was diagnosed in 54 on 253 hospitalized patients (21,3%) and prevalent in males (M/F ratio: AKI vs not-AKI 2.8 vs 1.4. p<0.001) and older patients (AKI vs Not-AKI 76.23y vs 71.1y p<0.05). CA-AKI was prevalent (55.56%) and renal AKI was more common in both groups. Hospital mortality was higher in AKI group (AKI vs not AKI: 51.8 % vs 21.7% p<0.0001). Age, previous CKD, obesity, male sex, high flux ventilation and treatment with vancomycin contributed significantly to AKI in the Cox regression model. Covid-19 infection is associated with pathologic urinalysis in most patients: microhematuria (62%), leukocyturia (44%) and abnormal UACR (85%). Only 13% of these patients had AKI.

Conclusion. AKI is a common and serious complication of COVID-19 infection. Renal CA-AKI is the prevalent form. Pathologic urinalysis is frequent and independently of AKI.

Clinic and demographic characteristics

	Total	M	F	P-Value
Nr. patient n (%)	253 (100%)	158 (62,7%)	94 (37,3%)	P<0,005
Average Age ±DS	72,25±14,95	68,50±14,89	78,47±12,84	P<0,005
COMORBIDITIES Nr. patients (%):		n; (%)	n; (%)	
• Hypertension	144 (56%)	84 (53%)	60 (63%)	ns
• Ischemic Cardiomiopathy	52 (20%)	35 (22%)	7 (18%)	ns
• Diabetes	50 (19%)	33 (21%)	17 (18%)	ns
• Obesity	40 (16%)	28 (17%)	12 (12,7%)	ns
• Dislipydemia	37 (14%)	21 (13%)	16 (17%)	ns
• Previous CKD	38 (15%)	20 (12,5%)	18 (19,1%)	ns
• COPD	24 (9%)	11 (7%)	13 (13,8%)	ns
• Chronic Liver Disease	15 (5%)	9 (5,6%)	6 (6,3%)	ns
• Smoke status	7 (2%)	7 (4,4%)	0 (0%)	ns





% Patients:	Day 1	Day 3	Day 7	P-Value
UACR >30 mg/g	85 %	83,3 %	83,3 %	ns
RBC c>20/ul	46,5 %	62,5 %	40,4 %	ns
WBC c>20/ul	44,3 %	43,7 %	37,5 %	ns
Crystals c>100/ul	6,6 %	6,6 %	4,55 %	ns
Cylinders c>20/ul	1,8 %	0 %	0 %	ns

38th Vicenza Course on AKI&CRRT
a week of virtual meetings
2-6 November 2020