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BACKGROUND AND AIMS: Kuwait enjoys a cool winter but suffers a very hot summer. We aim to evaluate the relationship between weather temperature and acute kidney injury (AKI) incidence and outcome.

METHOD: We prospectively collected demographic (age, sex and nationality), clinical (CKD status, cause of AKI and comorbidities), management (fluids, diuretics, inotropes, ventilatory support and dialysis) and 30-day patients and kidney outcome data for all adult nephrology consultations for AKI in seven major public hospitals in Kuwait during January, February and March/2021 and compared them to those of June, July and August/2021.

RESULTS: A total of 2038 patients with AKI were enrolled (mean age: 64; males: 59%, Kuwaitis: 58%; mean eGFR: 66.5; mean initial Hgb: 106). Of the cohort, 42% had baseline eGFR < 60 (with a mean eGFR of 37, a mean age of 68 and a mean Hgb of 102 versus a mean eGFR of 88, a mean age of 59 and a mean Hgb of 109 for the group with baseline eGFR > 60). Higher percentage of AKI cases took place in cooler months (63% versus 37%). Patients with AKI in cooler months were significantly older (65 versus 59), with lower baseline eGFR (63 versus 72.5) and more comorbidities (DM, HTN, CAD). There was no difference between the two groups in the use of IV fluids (saline, bicarbonate, blood products, etc.) or IV diuretics (loop, thiazide or potassium-sparing); however, IV vasopressors were used more often in cooler months in cases of AKI. Mechanical ventilation was more frequently used in the summer cases (44% of summer AKI cases versus 40% of winter AKI cases) but not statistically significant. Dialysis was needed for 44% of the entire cohort, 56% of dialysis cases were in cooler months (31% of winter AKI cases) and 44% in summer months (40% of summer AKI cases). Dialysis modality was continuous in 85% of all cases. At 30 days, 36.5% of the total cohort died; 72% of them died while on dialysis. Larger proportion of deaths in AKI cases in cooler months (58% of total deaths or 33% of the winter AKI cases versus 42% of the total death or 42% of the summer AKI cases), with more deaths while on dialysis seen in cooler months too (56% versus 44% of deaths while on dialysis). However, lower rates of complete recovery from AKI were seen in summer cases (33% versus 67%), with a mean final eGFR of 57 for the winter AKI cases versus 41 for the summer AKI cases.

CONCLUSION: AKI is more common in the cooler months of the year affecting an older group of patients with more comorbidities, and is associated with higher usage of dialysis and higher rates of death, but probably better chances of kidney recovery in those who survive.

MO297 ACUTE KIDNEY INJURY AMONG COVID-19 POSITIVE PATIENTS IS ASSOCIATED WITH HIGHER MORTALITY: SINGLE CENTER EXPERIENCE

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BACKGROUND AND AIMS: Despite the lungs are the major targets of COVID-19, other organs such as the kidneys are also affected. Renal complications of COVID-19 are not yet well studied. We aimed to study the prevalence of acute kidney injury (AKI) among positive COVID-19 cases that were managed in the intensive care unit (ICU) in a single isolation hospital during the pandemic, and to explore its impact on patient outcome.

METHOD: This retrospective study included 616 patients with COVID-19 who were managed in the ICU in a single isolation hospital in Kuwait during the pandemic, from February to December 2020. AKI was defined according to the serum creatinine criteria in the Kidney Disease: Improving Global Outcomes (KDIGO) guidelines. Of the 616 patients, 40.2% developed AKI (group 1, $n = 248$) and were compared with the patients without AKI (group 2, $n = 368$).

RESULTS: Most of cases in the two groups were males (73% versus 70.7%), aged (60.8 ± 14 versus 51.7 ± 16 years), respectively. The two groups were comparable

regarding chronic kidney disease (2% versus 0.8%) and chronic pulmonary disease. Other factors were significantly predominating among group 1 as diabetes mellitus (63.7 versus 40.5%), hypertension (74.2% versus 40.5%) and ischemic heart disease (26.2% versus 12.5%) ($P < .05$).

Fever, cough, shortness of breath and dehydration were significantly more frequent presentations among patients of group 1, and had radiological findings that were synchronized with COVID-19 (89.5% versus 50.8%) ($P < .05$). Moreover, sepsis, volume depletion, shock, arrhythmias and ARDS predominated among the AKI group ($P < .05$). The number of cases who were managed by therapeutic anticoagulation was significantly higher in AKI patients (89.9% versus 51.9%); also, cases who received supportive vasopressors and convalescent plasma transfusion as well as steroid were significantly higher in the same group ($P < .05$). Other therapeutic modalities such as antivirals, tocilizumab and hydroxychloroquine were comparable in both groups. We found that acute respiratory failure requiring mechanical ventilation was significant among the AKI group (66.8% versus 29.4%), and the overall mortality rate was significantly higher in the same group (62.5% versus 32.8%).

CONCLUSION: The prevalence of AKI in patients with COVID-19 was 40.2%, and it was associated with poor prognosis among ICU COVID-19 positive cases.

MO298 PREDICTORS OF RENAL FUNCTION RECOVERY IN CRITICALLY ILL PATIENTS WITH ACUTE KIDNEY INJURY

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BACKGROUND AND AIMS: Acute kidney injury (AKI) is a frequent and serious complication in critically ill patients admitted in intensive care unit (ICU). The development of acute kidney damage is associated with various adverse outcomes, such as prolonged stay in the ICU, the development of chronic kidney disease (CKD), increased mortality and increased treatment costs. The aim of this study was to determine the predictors of renal function recovery in critically ill patients with AKI who were treated with continuous renal replacement therapy (CRRT).

METHOD: We performed a single-centre retrospective study of 440 adult surgical and non-surgical patients with AKI or AKI episode in CKD who were admitted to the ICU between 2014 and 2018 and treated with CRRT. Demographic, clinical and laboratory parameters [urea, creatinine, C-reactive protein (CRP), procalcitonin (PCT), quick sequential organ failure assessment (qSOFA) score], comorbidities, the need for vasopressor therapy and mechanical lung ventilation on the day of confirmed AKI, as well as CRRT modalities were analysed. Renal recovery was defined by renal replacement therapy discontinuation within 90 days of its start. Patients with the Kidney Disease Improving Global Outcomes (KDIGO) stage 2 AKI and/or volume overload have had an 'early' start of CRRT within 24 h of the AKI diagnosis; patients with poor response to conservative treatment or evidence of clinical complications associated with AKI have had a 'late' start of CRRT. The patients were divided into two groups: patients with recovered renal function (RRF group) and patients who had not recovered renal function (NRRF group).

RESULTS: Out of a total of 440 patients, 242 (55%) recovered renal function. RRF versus NRRF group did not differ significantly by gender (males: 64.5% versus 69.7%) and age (mean age of 60.93 years versus 64.5 years). Cardiovascular diseases were the most common comorbidity in both groups of patients, and CKD was significantly more prevalent in the NRRF groups (88 versus 352, $P < .001$). There were no significant differences in examined laboratory parameters in the RRF and NRRF group (urea 27.28 versus 26.68 mmol/L; creatinine 401.43 versus 373.7 μ mol/L; CRP 144.38 versus 143.52 mg/L; PCT 23.07 versus 22.44 ng/L). No significant difference was found in relation to mechanical lung ventilation (234 in the RRF group versus 206 in the NRRF group; $P = .18$) and vasopressor therapy (221 in the RRF group versus 219 in the NRRF group; $P = 0.94$). Values of the qSOFA score were significantly lower ($P < .001$) in patients with recovered renal function (Fig. 1). In the RRF group, the most commonly used CRRT modality was CVVHD (165; 37.6%), while in the NRRF group it was CVVHDF (181; 40.9%). Predictors of renal recovery in critically ill patients who were treated with CRRT were: age <65 years ($P = .044$), an 'early' start of RRT ($P = .043$), absence of mechanical ventilation ($P = .044$) and absence of earlier CKD ($P = .005$) (Table 1). Predictors of renal recovery in septic critically ill patients with AKI treated with CRRT were: age <65 years ($P = .002$), the absence of diabetes mellitus ($P = .023$) and previous CKD ($P = .045$) and CRP < 100 mg/L ($P = .033$), while in critically ill patients without sepsis, the predictor of renal function recovery was the absence of previous kidney disease ($P = .035$).

CONCLUSION: Previous kidney disease is the most significant factor for the prediction of renal function recovery in critically ill patients with AKI treated with CRRT. Individual consideration of potential predictors of renal recovery, as well as a timely decision to initiate continuous dialysis, will prevent complications and improve the outcome of critically ill patients with AKI.