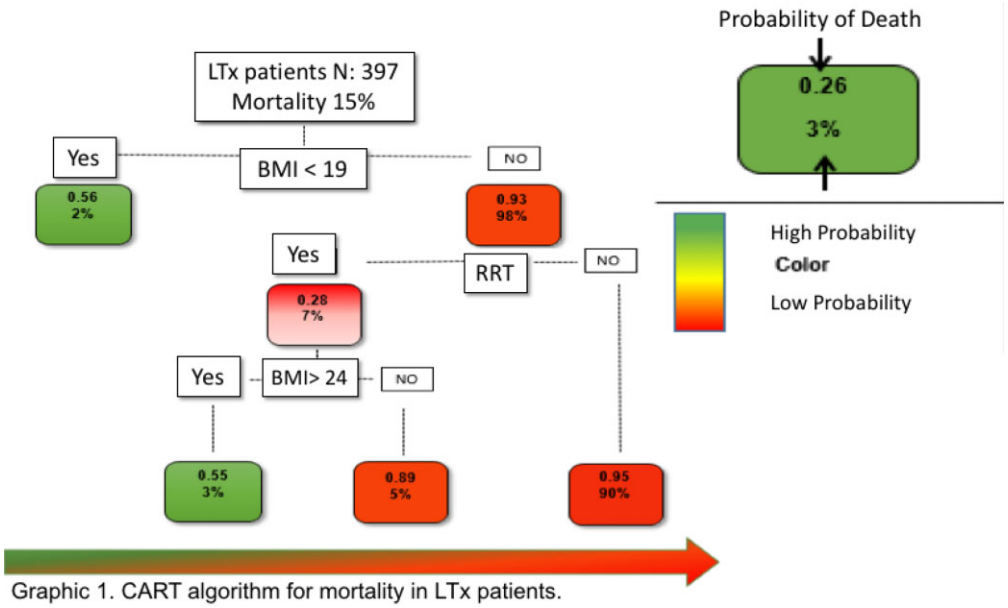
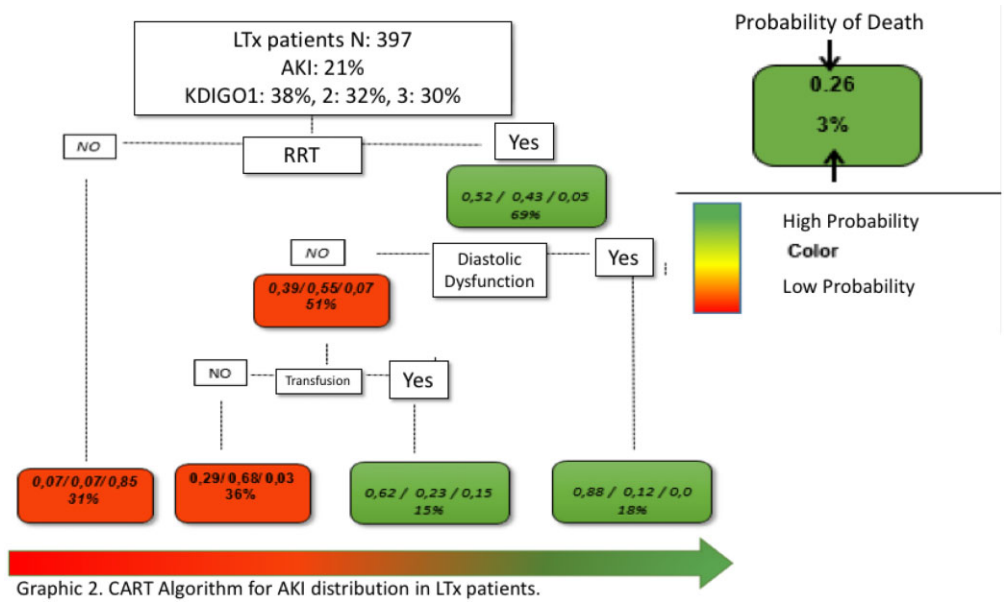



Graphic 1. CART algorithm for mortality in LTx patients.




Graphic 2. CART Algorithm for AKI distribution in LTx patients.


**REFERENCE**

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MO328 **ACUTE RENAL FAILURE IN COVID-19: AETIOLOGY AND RENAL EVOLUTION. AKI-COVID REGISTRY OF THE SPANISH SOCIETY OF NEPHROLOGY**


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**BACKGROUND AND AIMS:** Acute kidney injury (AKI) has been described as a frequent complication in patients with COVID-19. The incidence of AKI is estimated to be around 5%–80% depending on the series; however, data characterizing the type of AKI and the evolution of renal function parameters in the medium-long term are still limited.

**METHOD:** Based on the initial AKI-COVID Registry, we developed an extended registry where we registered retrospectively new variables that included clinical and demographic characteristics, infection severity parameters and data related to AKI (ethology, KDIGO classification, need of renal replacement therapy, analytic values: baseline creatinine, maximum creatinine during admission, creatinine at discharge or death, creatinine at 1 month after hospitalization and urinary parameters). Recovery of kidney function was defined as difference in at discharge or posthospitalization creatinine $< 0.3$ mg/dL with respect basal creatinine.

**RESULTS:** Our analysis included 196 patients: 74% male, mean age 66 + 13 years; 65% hypertensive, 33% diabetic and 22% chronic kidney disease. According to the KDIGO classification: 66% AKI KDIGO3, 17% KDIGO2 and 15% KDIGO1. Creatinine values are summarized in Table 1. We found significant differences in the baseline/high creatinine differential; these differences were lost after hospitalization. The main types of AKI were prerenal (35%) and acute tubular necrosis secondary to sepsis (ATN) (53%). 89% of patients with ATN presented AKI KDIGO 3, compared with 57% in the prerenal group ($P < .001$). Patients with prerenal AKI had greater

**Table 1. Analytical evolution of the patients included in the study. ANOVA test for independent samples**

| Analytical parameters (SD, 95% CI) | Total | KDIGO 1 | KDIGO 2 | KDIGO 3 | P value |
|---|---|---|---|---|---|
| **Baseline creatinine** | 1.22 (0.71, 1.03-1.37) | 1.56 (1.24, 0.67-2.45) | 1.01 (0.27, 0.88-1.15) | 1.19 (0.68, 0.98-1.40) | 0.46 |
| **Admission creatinine** | 1.84 (1.68, 1.45-2.24) | 1.97 (1.33, 1.01-2.92) | 1.58 (0.74, 1.21-1.96) | 1.92 (2.01, 1.31-2.53) | 0.49 |
| **Maximum creatinine** | 1.82 (2.03, 3.34-4.3) | 2.17 (1.44, 1.13-3.20) | 2.40 (0.84, 1.98-2.82) | 4.77 (1.91, 1.05-1.77) | < **0.0001** |
| **Discharge or death creatinine** | 1.14 (1.03, 1.13-1.62) | 1.70 (0.89, 1.06-2.34) | 1.11 (0.63, 0.80-1.42) | 1.41 (1.18, 1.05-1.77) | 0.12 |
| **Previous/ discharge or death creatinine difference** | 0.17 (0.68, 0.12-0.33) | 0.14 (-0.63, 0.20-0.48) | 0.09 (0.63, -0.21-0.41) | 0.21 (0.75, -0.11-0.44) | **0.03** |
| **Posthospitalization creatinine** | 1.35 (0.82, 1.16-1.55) | 1.59 (0.99, 0.88-2.30) | 1.14 (0.52, 0.88-1.40) | 1.39 (0.87, 1.12-1.65) | 0.44 |
| **Baseline/posthospitalization creatinine difference** | 0.15 (0.44, 0.95-0.26) | 0.02 (0.42, -0.27-0.32) | 0.12 (0.51, -0.12-0.37) | 0.19 (0.41, 0.07-0.32) | 0.61 |

comorbidity. On the other hand, patients with ATN AKI developed more serious COVID-19 infection: higher percentage of severe pneumonia, admission to the intensive care unit and need for orotracheal intubation. The analytical parameters were more extreme in patients with ATN AKI, except for creatinine and urea upon admission, which were higher in the prerenal AKI group.
A total of 89 patients died during the study; 65% of ATN AKI patients versus 31% of prerenal-AKI patients ($P < .001$). The ATN was a mortality risk factor, whit a hazard ratio 2.74 [95% confidence interval (95% CI )1.29–5.7] ($P = .008$) compared with the prerenal AKI.
**CONCLUSION:** AKI in hospitalized patients with COVID19 presented with two different clinical patterns. Prerenal AKI more frequently affected older, more comorbid patients, and with a mild COVID19 infection. The NTA AKI affected younger patients, with criteria of severity of infection and multiplying mortality almost three times. In analytical control 1-month post-hospitalization, most of the patients recovered their kidney function. Although the implications of AKI associated with COVID-19 in the development of chronic kidney disease are still unclear, our data suggest that most patients will recover kidney function in a medium term.

MO329 **ACUTE KIDNEY INJURY (AKI) IS ASSOCIATED WITH INCREASED IN-HOSPITAL MORTALITY AND WITH IMPAIRMENT OF RENAL, LUNG, MOTOR AND IMMUNE FUNCTION 1 YEAR AFTER DISCHARGE FOR COVID-19**

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**BACKGROUND AND AIMS:** AKI is the most frequent complication after respiratory failure in COVID-19. AKI increases mortality risk, length of hospital stay and healthcare costs, with possible progression towards CKD. Study aims: (1) evaluation of AKI incidence in 1020 COVID-19 hospitalized patients; (2) comparison of AKI incidence in COVID-19 versus pre-pandemic period; (3) establishment of out-patient follow-up for monitoring kidney, lung, motor and immune function; (4) creation of a biobank for biomarker discovery studies.
**METHOD:** AKI incidence was calculated matching laboratory and administrative data of 26 214 hospitalized patients in 2018–2019 and in 1020 COVID-19 patients in 2020–2021: KDIGO algorithms were applied for AKI grading. After 12 months from discharge, 232 COVID AKI patients and relative controls matched for age and gender were evaluated for kidney (eGFR, biomarkers of tubular damage NGAL, CCl-14, DKK-3), lung (DLCO, CT scan) and neuro-motor (SPPB, 2-min walking test, post-traumatic stress test-IES) function.
**RESULTS:** Before the pandemic, in-hospital AKI incidence was 18% (10% KDIGO 1, 5% KDIGO 2, 3% KDIGO 3): median age of AKI patients was 69. In-hospital mortality was 3.5% in non-AKI group versus 15% in AKI group in accordance with KDIGO stages. In COVID patients, AKI incidence increased to 37% (20% KDIGO 1.11% KDIGO 2, 6% KDIGO 3): median age of patients was 54. In-hospital mortality was 31% in the AKI group; AKI is an independent risk factor for death. After 12 months from hospital discharge, COVID AKI patients showed a persistent reduction of respiratory function (severe DLCO impairment < 60%) related to the extent of CT scan abnormalities. AKI patients also presented the motor function impairment and a worse post-traumatic stress response. GFR reduction was 1.8 mL/min in non-AKI patients versus 9.7 mL/min in AKI COVID patients not related to age. Urinary DKK-3