

# Urinary Biomarkers as Predictors of AKI in COVID-19 Hospitalized Patients with Pneumonia



Lilia Rizo-Topete MD, Giovanna Arteaga-Müller MD, Elisa Guerrero MD, Adrián Camacho PhD MD, Eduardo Pérez MD, Victor Esquivel MD, Valeriano Enriquez MD, Luis Mata ME, Luis Rangel ME, Gabriela Aguilar ME. Hospital Universitario "José Eleuterio González", Universidad Autónoma de Nuevo León,

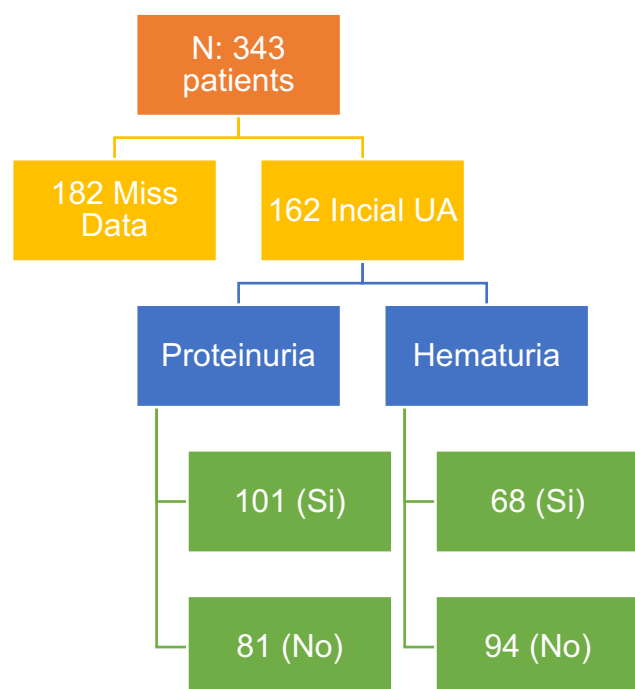


## Introduction

It is showed the multidisciplinary management of the COVID's patients is essential for their evolution, and the early detection of organic dysfunction could be an important role to avoid mortality. In March 2020, COVID-19 pandemic reach Mexico, and it led all the health system to change the intrahospital management. From April to August 2020, our hospital presented the first wave severe cases of COVID-19 which required KRT or CKRT, most of them where at the ICU.

## Methods and Materials

Retrospective analysis, all patients older than 18 years that were hospitalized at the Hospital Universitario de Monterrey, in the COVID area, with urinary exam at the first 24 hours of arrival. Patients from March to August 2020. Objective: to evaluate if the urinary sedimentation from the beginning could detect these patients who could develop AKI or the need of KRT on the combination with other factors. All data were analyzed using SPSS statistical software (version 25; IBM Corporation, Armonk, New York).



## Results

343 patients, 162 patients with urinary exam from the first 24 hours of hospitalization (obtained when our nephrology team take place at COVID area every day). Average age 49 years (min 18-max 91y), 37 patients requires kidney replacement therapy, most of them males (53.7%). More than 50% where KDIGO 3 at hospital admission. 86.5% with proteinuria and 67.6% hematuria.

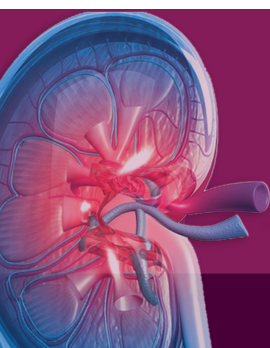
The variables were examined using logistic regression and the results showed that those patients with hematuria [OR 3.87 (95% CI 1.708-8.797), p = 0.001] and proteinuria [OR 4.15 (95% CI 1.477-11.677), p = 0.007] have a higher risk of requiring KRT (Table 2), and for those who had: hematuria [OR 2.2 (95% CI 1.057-4.465), p = 0.035], a progression in KDIGO [OR 3.4 (95% CI 1.252-9.291), p = 0.016] and also an age older than 40 years [OR 6.9 (95% CI 2.498-19.13), p = <0.001] have a higher risk of death.

Table 2 | Risk factors associated with RRT requirement in patients with COVID-19

Variable dependiente:	95% C.I. para OR				
	B	Sig.	OR	Inferior	Superior
Hematuria	1.355	0.001	3.9	1.708	8.797
Proteinuria	1.424	0.007	4.2	1.477	11.677

## Conclusions

The presence of active sedimentary urinary on COVID patients is frequent. The patients who present the combination of hematuria and proteinuria develop severe AKI (KDIGO 3 without KRT) or the need for KRT. Factors in patients such as to be on their upper edge of 40 years old, the presence of hyperkalemia, metabolic acidosis, also the hematuria and proteinuria, suggest the AKI risk that required KRT.



THE 27TH INTERNATIONAL CONFERENCE ON  
ADVANCES IN CRITICAL CARE NEPHROLOGY

# AKI & CRRT 2022

MARCH 7-10, 2022

SAN DIEGO, CALIFORNIA