In conclusion, reinfections in kidney transplants are plausible and require paying attention to those patients who developed COVID-19 symptoms even if they have had a previous episode.

REFERENCES

1. Krishna E, Pathak VK, Prasad R, Jose H, Kumar MM. COVID-19 reinfection: linked possibilities and future outlook. J Family Med Prim Care. 2020;9:5445–9, http://dx.doi.org/10.4103/jfmpc.jfmpc_1672_20.
2. Kellam P, Barclay W. The dynamics of humoral immune responses following SARS-CoV-2 infection and the potential for reinfection. J Gen Virol. 2020;101:791–7, http://dx.doi.org/10.1099/jgv.0.001439.
3. Ling Y, Xu SB, Lin YX, Tian D, Zhu ZQ, Dai FH, et al. Persistence and clearance of viral RNA in 2019 novel coronavirus disease rehabilitation patients. Chin Med J (Engl). 2020;133:1039–43, http://dx.doi.org/10.1097/CM9.0000000000000774.
4. Boyarsky BJ, Werbel WA, Avery RK, Tobian AAR, Massie AB, Segev DL, et al. Immunogenicity of a single dose of SARS-CoV-2 messenger RNA vaccine in solid organ transplant recipients. JAMA. 2021;325:1784-6, https://doi.org/10.1001/jama.2021.4385.

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We must evaluate the previous kidney damage in the acute kidney failure due to COVID-19

Debemos evaluar el daño renal previo en el fracaso renal agudo por COVID-19

Dear Editor,

On behalf of all the authors, we would like to convey our gratitude to you for showing interest in our publication, as reflected in your letter to the editor[1,2].

The sample size is indeed a limitation of our work and this is reflected in the discussion, even though this is the largest Spanish prospective series to date of acute kidney injury (AKI) in patients with COVID-19 directly treated by nephrology. This implies a negative selection bias for the most critical patients who required referral to the nephrologist due to the severity of their condition, the need for dialysis or additional complications. Under no circumstances can we take our series of 41 patients as representative of AKI in the COVID-19 patient in general. In fact, our analysis approach is fundamentally descriptive. Our focus was on highlighting the tremendous variability of causes, clinical presentations and outcomes we have collected and which go beyond direct kidney involvement due to the SARS-CoV-2 infection or resulting from the cytokine storm. We wanted to give a perspective from the point of view of the nephrologist, providing clarity at a time when there were large gaps in our knowledge. If you remember, the Ministry's COVID-19 report of April 2020 did not acknowledge chronic kidney disease (CKD) as a risk factor, and nor did it provide published evidence that AKI was a problem associated with COVID-19[3].

As for the differential diagnosis between AKI and CKD, we specified in the methods section that the KDIGO criteria were used to diagnose AKI. It is then clarified in the section on baseline characteristics, within the results, that 36.6% of our population had underlying CKD. In our previous analysis of 1.600 patients admitted to the hospital as a whole during the first wave, the association of CKD and AKI was specifically analysed separately in the prognosis of the patients[4]. In the same issue, editorial comments precisely stress this point, the difficulty of separating pure AKI from the deterioration of pre-existing CKD[5].

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REFERENCES

1. Tarragón B, Valdenebro M, Serrano ML, Maroto A, Llópez-Carratalá MR, Ramos A, et al. Acute kidney failure in

patients admitted due to COVID-19. Nefrologia. 2021;41:34–40, http://dx.doi.org/10.1016/j.nefro.2020.08.005.
2. Rebaza-Mateo A, Yarasca-Moreno F, Tataje-Lavanda L. Apreciación del fracaso renal agudo en pacientes con por COVID-19. Nefrología. 2021, http://dx.doi.org/10.1016/j.nefro.2021.06.002.
3. Ministerio de Sanidad de España. Estudio ENE-COVID19: primera ronda. Estudio nacional de sero-epidemiología de la infección por SARS-CoV-2 en España [Acceses on May 2020]. Available in: https://www.mscbs.gob.es/ciudadanos/ene-covid/home.htm.
4. Portolés J, Marques M, López Sánchez PM, de Valdenebro M, Múñez E, Serrano ML, et al. Chronic kidney disease and acute kidney injury in the coronavirus disease 2019 Spanish Outbreak. Nephrol Dial Transplant. 2020;35:1353–61, http://dx.doi.org/10.1093/ndt/gfaa189.
5. Meijers B, Hilbrands LB. The clinical characteristics of coronavirus-associated nephropathy. Nephrol Dial Transplant. 2020;35:1279–81, http://dx.doi.org/10.1093/ndt/gfaa197.

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Appreciation of acute kidney failure in patients with COVID-19 infection

Apreciación del fracaso renal agudo en pacientes con COVID-19

Dear Editor,

We read with great interest the article published by Tarragón-Blanca et al, whose aim was to describe the different presentations of acute kidney injury (AKI) requiring intervention by the nephrologist, its clinical course and possible strategies for early detection and nephroprotection. The authors concluded that hypovolaemia and dehydration are the most common causes of AKI in patients with COVID-19, as well as a poorer respiratory, analytical and renal prognosis. They also recommended monitoring of renal markers, in addition to personalised management of blood volume, as these may be decisive in preventing AKI[1].

In the study, an updated clinical correlation was rightly made in the description of patients with COVID-19 infection in relation to the WHO classification and CURB-65, and the staging of acute kidney injury according to the KDIGO guidelines.

The therapeutic strategy for AKI continues to be both conventional renal replacement therapy and continuous veno-venous haemodiafiltration, positive reinforcement on our part for differentiating the clinical course of the patient associated with COVID-19 infection. They even compare the discharge of patients with AKI on admission and in-hospital AKI[2].

One of the weaknesses of the study is the small sample size, as type II error can occur, leading to false negatives being obtained, which could exclude variables that need to be taken into account. Elsewhere, in the description of the renal failure, a previous nephropathy could be considered associated with its aetiology, and the clinical course could be compared in in-hospital AKI associated with COVID-19 infection[3].

In addition, attention should be given to the differences between the increase in laboratory standards such as creatinine, urea, haematuria and proteinuria from previous episodes of nephropathy related to its aetiology, and in-hospital renal failure[3,4].

Hospital outcomes could include the duration of acute kidney injury and its relationship with the patient's hospital stay, whether they had AKI on admission or in-hospital[5].

We congratulate the authors for their published work, as it provides valuable information on the association of acute kidney injury with COVID-19, while also taking the follow-up by nephrologists into account. In addition, it broadens the panorama beyond mere parenchymal involvement by SARS-CoV-2, while being the first study to analyse a Spanish cohort.

Conflicts of interest

The authors have no conflicts of interest to declare with regard to the writing of this letter.

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