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LETTERS TO THE EDITOR

Reply to the article: "SARS-CoV-2 infection in hospitalized pediatric patients with kidney disease"

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Dear authors,

In the course of the study presented by the paper entitled: "SARS-CoV-2 infection in hospitalized pediatric patients with kidney disease"[1], based on the analysis of 7 children with only renal comorbidity combined with a positive test for SARS-CoV-2 infection, the authors described 6 with mild symptoms, and the most common symptoms were: fever, cough, dyspnea, diarrhea and runny nose, as well as no radiological changes. On the other hand, one child involved in the study required oxygen therapy and had a more severe version of the disease, but it is necessary to take into account that her case of infection by SARS-CoV-2 was associated with bacteremia from a dialysis catheter[1].

Therefore, although the results presented by this study are conclusive, the reason why, in general, pediatric patients with kidney disease do not manifest a serious clinical condition with the infection by the new coronavirus, still needs a lot of study, since in adult patients the acute kidney injury is evident. Martinez-Rojas et al.[2] demonstrated a considerable incidence of many COVID-19-associated renal abnormalities reported in adults, including proteinuria, hematuria, and acute kidney injury, associated with the virus affinity for human angiotensin-converting enzyme 2, able to disrupt the homeostasis of the renin-angiotensin-aldosterone system. In addition, it has been recently shown that SARS-CoV-2 can infect podocytes and tubular epithelial cells, being one more cause point for renal damage.

Regarding the number of kidney complications in adults and children, Andrade[3] advises that in children with clinical manifestations, the symptoms are similar to those of flu, with cough, fever, sore throat, runny nose, headache, muscle pain, vomiting, diarrhea, ocular manifestations, nonspecific skin conditions, among other symptoms. However, adults may develop dysfunction (renal failure) with the need for dialysis (artificial resource to replace kidney function) in severe cases[3].

Cheng et all[4] reported that lymphocyte levels, proteinuria, hematuria, elevated basal BUN (blood urea nitrogen), serum creatinine, peak serum creatinine > 133 mmol/l and AKI (acute kidney injury) during stage 2, are related to serious risks of future renal complications in patients with Covid-19.[4] Therefore, monitoring renal function should be emphasized, even in patients with mild respiratory symptoms and impaired renal function, showing that early detection and treatment of renal abnormalities, may help improve the COVID-19 prognosis.

In general, the paper brought to light that pediatric patients with kidney disease, including those using immunosuppressants, do not seem to develop more severe cases of infection by COVID19 when compared to immunocompetent healthy patients in the same age range. It is important to point out that it is still early to draw a detailed conclusion that such pediatric patients with CKD (Chronic Kidney Disease) are at a risk that is similar to that of healthy children for developing serious coronavirus complications.

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Therefore, we need a larger number of studies that focus on the action of this virus related to chronic and acute kidney diseases in children.

REFERENCES

1. Silveira FD, Zuntini KLCR, Silveira MD, Tavares LVS, Mendes JB, Cruz CG, et al. Infecção por SARS-CoV-2 em pacientes pediátricos portadores de doenças renais hospitalizados. Resid Pediatr [Internet]. 2020; [citado 2020 Out 14]; 10(3):1-5. Disponível em: https://residenciapediatrica.com.br/detalhes/479/infeccao%20por%20sars-cov-2%20em%20pacientes%20pediatricos%20portadores%20de%20doencas%20renais%20hospitalizados
2. Martinez-Rojas AM, Vega-Vega O, Bobadilla NA. Is the kidney a target of SARS-CoV-2?. Am J Physiol Renal Physiol [Internet]. 2020 Jun; [citado 2020 Out 14]; 318(6):F1454-62. Disponível em: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7303722/
3. Andrade OVB. COVID-19 e envolvimento renal [Internet]. São Paulo: Pediatra Orienta; 2020; [acesso em 2020 Out 12]. Disponível em: https://www.pediatraorienta.org.br/covid-19-e-envolvimento-renal/
4. Cheng Y, Luo R, Wang K, Zhang M, Wang Z, Dong L, et al. Kidney disease is associated with in-hospital death of patients with COVID-19. Kidney Int. 2020 Mai;97(5):829-38. DOI: http://dx.doi.org/10.1016/j.kint.2020.03.005