Impact of the COVID-19 Pandemic on Kidney Diseases Requiring Renal Biopsy: A Single-Center Observational Study

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Background: The coronavirus disease-2019 (COVID-19) pandemic impacted healthcare services for kidney disease patients. Lockdown and social distancing were mandated worldwide. The closing of medical services has delayed the diagnosis of kidney diseases since many patients may have been delayed during the COVID-19 pandemic because non-urgent tests and visits were postponed due to closure of medical services during the lockdown.

Methods: We here report the impact of the COVID-19 pandemic on a total number of 209 native kidney disease patients requiring renal biopsy for diagnosis in a retrospective observational study from a tertiary hospital in Germany. Results: The lockdown period in March and April 2020 primarily affected patients admitted to the normal medical ward with a compensatory increased rate of renal biopsies in May 2020. Furthermore, there was a shift towards more patients admitted with COVID-19 and hemoglobinuria during the COVID-19 pandemic. This phenomenon of an increased number of patients with hemoglobinuria during the COVID-19 pandemic was specifically observed in a subgroup with hypertensive nephropathy requiring renal biopsy, not attributed to the COVID-19 lockdown period itself.

Conclusions: To our knowledge, this is the first report of identifying a subpopulation susceptible to closure of medical services during the COVID-19 pandemic and diagnostic delay of specific kidney diseases. Therefore, the COVID-19 pandemic should be regarded as a risk factor, especially in patients with diseases other than COVID-19 primarily admitted to the normal medical ward.

Tip Lesion Variant of Focal and Segmental Glomerulosclerosis (FSGS): COVID-19: Health Systems and More

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Introduction: Acute kidney injury (AKI) is a common complication of SARS-CoV-2 infection. Published cases report acute tubular injury as the most common pathologic finding in these patients. Glomerular disease has been reported in a minority of patients, with collapsing focal segmental glomerulosclerosis being the most common. Nonetheless, the exact etiologic evidence is sparse and inconclusive. The authors present a case of a patient diagnosed with a tip lesion variant of focal and segmental glomerulosclerosis (FSGS) and concomitant SARS-CoV-2 infection.

Case Description: A 43-year-old African woman, with no known past medical history, presented to the emergency department of fatiguing weakness, fever, cough, hypoaesthesia, myalgia, dyspnea, nausea and vomiting. Laboratory tests confirmed SARS-CoV-2 infection. Despite fluid therapy, there was an elevation of serum creatinine from 1.1 to 1.6mg/dl and the urinalysis was positive for protein (4) and blood (2). The urinary sediment revealed 3 red blood cells per high-power field. The urinary protein/creatinine ratio was approximately 13 g, subsequently confirmed with a 24-hour urine collection (13445 mg/24hours). All immunological tests were negative with the exception of hepatitis B serology (positive for HBV past infection). Renal ultrasonography showed a right kidney of 106 mm and a left kidney measuring 99 mm with important reduction of corticomedullary differentiation. After cure criteria for COVID-19, the proteinuria was 1022 mg/24h. The kidney biopsy revealed a tip lesion variant of focal and segmental glomerulosclerosis (FSGS). Low dose angiotensin converting enzyme inhibitors were started but no corticotherapy due to spontaneous regression of proteinuria. The patient returned home 20 days later with rash on the upper and lower extremities, hand and wrist pain, acute kidney injury and new onset nephrotic syndrome with 6.6g proteinuria and microscopic isomorphic hematuria. He had detectable SARS-CoV-2 RNA in the nasopharyngeal spec and mild multifocal pneumonia treated with intravenous Remdesivir. Serologic work-up for nephrotic syndrome was negative. A skin biopsy demonstrated leukocytoclastic vasculitis. Renal allograft biopsy showed membrane proliferative and sclerosing glomerulonephritis with dominant IgA staining by immunofluorescence, consistent with IgA nephropathy. He received pulse dexamethasone for 3 days with improvement in kidney function and reduction of his proteinuria to 0.6 g 4 months after steroid treatment.

Discussion: We postulated that our patient developed de novo HSP and nephrotic syndrome as a result of COVID-19 infection. Podocytopathy and nephrotic syndrome linked to viral infection have been well described, particularly in AA patients with high-risk APOL1 genotype. Key cytokines known to be elevated in COVID19 infection can drive autoimmune responses, such as interferon and IL-6. Cytoxine release, uncontrolled activation of both innate and adaptive immune cells, along with genetic variants likely pre-dispose patients to the development of glomerular disease mediated by various immune mechanisms. Published biopsy series consistently demonstrate acute tubular injury as the most common renal manifestation of COVID-19 manifestation, however, new onset autoimmune diseases such as IgAN may also be triggered by COVID infection. HSP can be a rare complication but was noted in COVID cases. Thus the current coronavirus disease and systemic autoimmunity should be recognized as a complication of COVID-19, regardless of the presence or absence of pulmonary findings.

COVID-19 Infection in Kidney Transplant Recipients: A Single-Center Case Series of 10 Cases from Dominican Republic

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Introduction: The coronavirus disease 2019 (COVID-19) has caused tremendous impact globally due to the significant morbidity and mortality caused by this virus. It is currently known that the probability of becoming seriously ill from this disease is higher in older adults, in people with pre-existing comorbidities, and those with a suppressed immune state. Therefore, transplant patients are not the exception. Considering the importance of this topic and the scarce information on the outcome of this type of patient, especially in Latin America, this series of cases is focused on our experience with 10 kidney transplant patients hospitalized for COVID-19.

Case Description: The age range of the patients was 41 to 68 years, where 8 of these were men. The most common admission symptoms were fever (50%), dyspnea (70%), myalgia/arthritis (50%), and headache (50%). The most prevalent laboratory findings were lymphopenia and increased inflammatory markers such as D-dimer, LDH, procalcitonin, erythrocyte sedimentation, and ferritin. General management included supportive treatment, statins, and antithrombotic therapy, while the specific treatment options were hydroxychloroquine, antivirals, corticosteroids, intravenous ig, tofacitinib, and supportive treatment, statins, and antithrombotic therapy, while the specific treatment options were hydroxychloroquine, antivirals, corticosteroids, intravenous ig, tofacitinib, and antithrombotic therapy. Two of them went to the ICU and only one required mechanical ventilation. The majority of the patients tested positive for SARS-CoV-2 remained with their baseline immunosuppression without dose reduction or suspension.