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RENAL THROMBOTIC MICROANGIOPATHY, ANCA VASCULITIS AND COVID 19 INFECTION: AN INTRIGUING ASSOCIATION
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Introduction: Microscopic polyangiitis MPA is an idiopathic autoimmune disease characterized by a systemic vasculitis that predominantly affects the small- caliber blood vessels, particularly involving the kidney, lungs, nerves, skin and joints. The association between renal thrombotic microangiopathy, ANCA vasculitis and covid 19 infection is rare and new.

Methods: We report a case of a renal thrombotic microangiopathy in an ANCA-associated vasculitis with Covid 19 infection.

Results: We present a case of a 49-year old man, presented to the emergency department with complaints of dyspnea, hemoptysis, epistaxis and an hypertensive encephalopathy. He was intubated due to worsening respiratory failure. Two thoracic scan revealed ground glass opacities suggesting a SARS-Cov2 infection and RT-PCR COVID-19 positive from nasopharyngeal swab. Laboratory studies revealed the following: hemoglobin 7.6 g/dL, CRP 88mg/l, creatinine 700 mol/L, blood glucose 0,7 g/ L. The urine dipstick test showed microscopic hematuria and proteinuria. Vasculitis workup was admisston revealed: hemoglobin 5.3g/dL prompting transfusion and creatinine 1200 umol/dl requiring dialysis. He was extubated after 14days then was transferred to nephrology department because of renal failure. On physical exam, he appeared confused, disoriented to place and time, euvolemic and afibrile, with a blood pressure of 110/70 mmHg. The rest of his physical examination was unremarkable. Complete blood test on admission revealed: hemoglobin 7.6 g/dL, CRP 88mg/l, creatinine 700 μmol/L, blood glucose 0,7 g/ L. The urine dipstick test showed microscopic hematuria and proteinuria. Vasculitis workup was remarkable for a positive p-antineutrophil cytoplasmatic antibody (p-ANCA), positive myeloperoxidase- (MPO-) ANCA of >11 antibody index. Results were negative for anti-glomerular basement membrane antibodies and anti-proteinase-3 antibody. CT scan was performed showing the same lesions of ground glass opacities as the two previous scans. Bronchoalveolar lavage wasn't done due to covid situation. Furthermore, in front of the neurologic manifestations, a cerebral MRI was done and showed White matter lesions suggesting the diagnosis of cerebral vasculitis, Central pontine myelinolysis (CPM) and extrapontine myelinolysis (EPM), and lled sinus cavities. The lumbar puncture’s results were normal. The kidney biopsy was showed vascular involvement and fibrous crescent. Immunofluorescence was negative. The fundus examination revealed an hypertensive choroide- opathic and methemoglobin 1 gram IV for 5 days, switched to oral prednisone 1mg/kg/day and cyclophosphamide 0.5g/kg were prescribed. In addition, he received one round of plasma exchange for pulmonary hemorrhage. 20 days after receiving this treatment, the patient developed fever and dyspnea. We made an infectious investigation: the urine culture positive to Candida, Hemocultures done, RT-PCR COVID-19 was negative. Thoracic scan revealed a bronchoalveolar hemorrhage. He received broad spectrum antibiotics ( Imipenem, amikacin, Fluconazole, Colistin and teicoplanin) but he died of sepsis two days later.

Conclusions: In summary, ANCA-associated GN and thrombotic microangiopathy can be associated with COVID-19. In a relatively short period of time, several case reports have begun to shed some light on potential mechanisms of kidney injury associated with COVID-19. Like the majority of kidney diseases, the mechanisms are most likely to be multifactorial.

No conflict of interest

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ACUTE KIDNEY INJURY AND RENAL RECOVERY IN UGANDAN CHILDREN WITH SEVERE MALARIA
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Introduction: Acute kidney injury (AKI) is increasingly recognized as an important clinical Complication in children with severe malaria associated with increased morbidity and mortality, including long-term neurocognitive and behavioral problems in surviving children. The objective of this study was to evaluate AKI and renal recovery in a prospective cohort study of children with severe malaria admitted to two hospitals in Uganda: Mulago National Referral Hospital in Kampala in Central Uganda and Jinja Regional Referral Hospital in Eastern Uganda.

Methods: 598 children hospitalized with Plasmodium falciparum with clinical features of severe malaria and at least one creatinine measure were enrolled in the study and followed for 12 months. 118 healthy community children were enrolled to assess normal kidney function. Serum creatinine was measured using a Beckman Coulter AU5822 chemistry analyzer using the modified Jaffe colorimetric method on cryopreserved samples. Study definitions are described in Figure 1.

Results: The prevalence of AKI was 45.3% and was more common in Jinja (57.5%) compared to Kampala (35.5%) (p<0.0001). The maximum AKI was a case of a renal thrombotic microangiopathy in an ANCA-associated vasculitis with Covid 19 infection.

Figure 1. Study design and definitions

Conclusions: Additional research is needed to understand how AKI impacts long-term kidney function and to understand regional differences in kidney function in malaria-endemic settings.

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CHARACTERISTICS OF KIDNEY DYSFUNCTION IN RURAL SOUTH AFRICA AND ITS ASSOCIATION WITH SCHISTOSOMA HAEMATOMBII INFECTION: A CROSS-SECTIONAL POPULATION STUDY
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Introduction: Schistosoma haematobium infection is the most common helminth infection in the world, affecting over 100 million people in Africa. It is a leading cause of morbidity and mortality in many countries and is associated with significant economic burden. In rural South Africa, the prevalence of S. haematobium infection is high, but there is limited understanding of the impact of this infection on kidney health.

Methods: This was a cross-sectional study of 1,875 adults aged 18-74 years from two communities in rural South Africa. Participants were recruited using a cluster sampling approach and underwent a standardized physical examination, blood work, and a urine sample for urine microscopy and culture. The primary outcome was kidney function assessed by serum creatinine and estimated glomerular filtration rate (eGFR). The secondary outcomes were the prevalence of proteinuria, haematuria, and kidney stone formation. The relationship between S. haematobium infection and kidney function was assessed using multivariable regression analysis.

Results: The prevalence of S. haematobium infection was 40.7% (95% CI 38.0-43.4). The prevalence of kidney stones was 4.3% (95% CI 3.0-5.9). The prevalence of proteinuria was 20.5% (95% CI 18.2-22.8) and the prevalence of haematuria was 12.1% (95% CI 10.0-14.5). The prevalence of AKI was 10.3% (95% CI 8.5-12.3). The prevalence of CKD was 5.0% (95% CI 3.5-7.0). There was a significant association between S. haematobium infection and kidney stones (p=0.01), proteinuria (p<0.001), and haematuria (p<0.001). There was a significant association between S. haematobium infection and AKI (p=0.01) and CKD (p=0.03). The prevalence of S. haematobium infection was higher in participants with proteinuria (p=0.04) and haematuria (p=0.02). The prevalence of S. haematobium infection was higher in participants with AKI (p=0.04) and CKD (p=0.02).

Conclusions: Schistosoma haematobium infection is associated with kidney stones, proteinuria, haematuria, and kidney dysfunction in rural South Africa. Further research is needed to understand the mechanisms underlying the association between S. haematobium infection and kidney function and to develop effective strategies for the prevention and treatment of kidney diseases associated with schistosomiasis.

No conflict of interest