Introduction: IgA nephropathy (IgAN) is characterized by mesangial deposits of IgA1-containing immune complexes (IC) and often co-deposits with complement 3 (C3). Our previous study demonstrated that apoptosis inhibitor of macrophage (AIM), which stably associates with IgM pentamers in the blood and dissociates from IgM contributing to disease repair under conditions like acute kidney injury, plays an important role in IgA1-containing IC formation, complement activation in the pathogenesis of IgAN. The aim of present study is to evaluate the association between glomerular or circulating AIM and clinicopathological features in IgAN patients and to elucidate the pathogenic role of AIM in the pathogenesis of IgAN.
Methods: We enrolled 60 of biopsy-proven IgAN patients in Juntendo University Hospital. Renal deposition of AIM was analyzed by immunofluorescent staining. Serum total and IgM-free AIM were measured by enzyme-linked immunosorbent assay, and 30 of age matched healthy controls were used as control. We analyzed the association between glomerular AIM deposition or serum AIM levels and clinicopathological features at diagnosis and during clinical course of treatment.
Results: All patients with IgAN detected AIM co-deposited with IgA in mesangial area. Oxford classification score of endocapillary hypercellularity (E) 1 and Crescent formation (C) 1/2 presented with significantly higher intensity of AIM deposition ($P<0.01$). Intensity of glomerular AIM deposition was associated with degree of hematuria ($P< 0.05$), and positively correlated with intensity of glomerular C3 ($r^2=0.54$, $P<0.0001$) and complement components (factor B; $r^2=0.45$, MASP-2; $r^2=0.56$, C4d; $r^2=0.70$, and C5b-9; $r^2=0.33$, $P<0.0005$) deposition. Furthermore, serum IgM-free AIM levels were elevated in IgAN patients compared with healthy controls (0.83 μg/ml vs. 0.53μg/ml, $P < 0.0001$), and associated with degree of hematuria ($P< 0.05$) and serum IgA levels ($P< 0.01$). Of note, serum IgM-free AIM levels significantly decreased after tonsillectomy and steroid therapy (TSP) ($P< 0.0001$), and Kaplan-Meier analysis showed that serum IgM-free AIM levels after TSP positively correlated with remission rate of hematuria ($P< 0.01$).
Conclusions: We confirmed the association between glomerular AIM expression and the severity of IgAN, suggesting that glomerular injuries were mediated by IgA-containing IC formation and complement activation through AIM. Glomerular AIM deposition without IgM and elevation of serum IgM-free AIM levels suggested that AIM dissociated from IgM pentamer systemically and accumulated on glomeruli. Serum IgM-free AIM levels reflected severity and treatment response of hematuria, and thus serum IgM-free AIM levels could be useful to determine disease activity of IgAN.

No conflict of interest

WCN23-0507

A 10-YEAR EXPERIENCE IN KIDNEY BIOPSY AT A SINGLE CENTRE IN MAURITIUS

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Introduction: The leading cause of chronic kidney disease (CKD) in Mauritius is diabetic nephropathy. However, little else is known about its aetiology on the island which has one of the highest rates of CKD in the world. Kidney biopsy is not widely performed with an estimated rate of 8 biopsies pmp/year and no kidney biopsy data from Mauritius has ever been published before. Our hospital, Sir Seewoosagur Ramgoolam National Hospital (SSRNH), has the biggest series of kidney biopsies in the country.
Methods: We retrospectively analysed the case histology request forms and reports of 73 consecutive native kidney biopsies performed in 72 patients at SSRNH over a 10 year period between 2012 and 2022. One patient had a repeat kidney biopsy because of doubts about the initial diagnosis.
Results: The average age of the 72 patients was 35.7 years old with a range of 13 to 71 years. 33 (45.8%) patients were of female sex. Proteinuria was documented in 67 (93.1%), haematuria in 19 (26.4%) and hypertension in 31 (43.1%) patients. In terms of kidney function, 11 (15.3%) of the patients were classified as having acute kidney injury, 27 (37.5%) chronic kidney disease and 30 (41.7%) normal kidney function. 4 (5.6%) patients were on kidney replacement therapy at time of biopsy. The number of patients for the following indications for kidney biopsy were: nephrotic syndrome 36 (50%), acute nephritic syndrome 15 (20.8%). chronic nephritic syndrome 10 (13.9%), proteinuria with impaired kidney function 8 (11.1%), other acute kidney injury 2 (2.8%) and isolated proteinuria 1 (1.4%). No patient was biopsied for isolated haematuria. Table 1 summarises the patient characteristics and clinical features.

One of 73 biopsy samples did not yield any glomerulus. The average number of glomeruli per biopsy was 15.2 (±7.4 SD). 58 (79.5%) of biopsies were deemed to be adequate (>10 glomeruli). 2 (2.7%) patients suffered a complication due to kidney biopsy: 1 patient had hypovolaemic shock that required a surgical intervention to stop the bleeding and 1 patient had pain related to a self-limiting peri-renal haematoma.

Of 73 samples, 1 was non-diagnostic (no glomeruli). The most common primary renal disease was membranous nephropathy in 12 (16.7%) patients followed by minimal change disease (15.3%), IgA nephropathy 8 (11.1%), crescentic glomerulonephritis 8 (11.1%), focal segmental glomerulosclerosis 6 (8.3%) and membranoproliferative glomerulonephritis in 3 (4.16%). The leading secondary renal disease was lupus nephritis in 11 (15.3%) patients followed by diabetic nephropathy 4 (5.6%) and amyloidosis (2.8%). Figure 1 gives further details.
Conclusions: In common to many developing countries, the main indication for biopsy was nephrotic syndrome which may explain why membranous nephropathy, not IgA nephropathy, was the commonest primary glomerular disease. IgA nephropathy may also be under represented because most of the diagnoses were only made after 2020 when access to immunofluorescence became reliable. The prevalence of diabetes in Mauritius is about 24% and diabetic patients are therefore rarely biopsied. This small and unrepresentative series is nonetheless the first glimpse at the spectrum of primary glomerular disease in Mauritius. Kidney biopsy is grossly underutilised as a diagnostic tool and efforts must be made to increase its use in the country.

No conflict of interest

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CLINICOPATHOLOGICAL FEATURES AND PREDICTORS OF TREATMENT RESPONSE IN BIOPSY-PROVEN LUPUS NEPHRITIS IN AN AFRO-CARIBBEAN POPULATION

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Introduction: Jamaica has a predominant African ancestry and a high burden of lupus nephritis (LN), with lupus amongst the three leading causes of End Stage Renal Disease (ESRD). We aimed to describe the clinicopathological features and determinants of treatment response in a cohort of biopsy-proven LN in Jamaica.
Methods: A retrospective cohort study was performed of adult and paediatric patients with biopsy-proven LN during the period July 1, 2013 to June 30, 2020, at the Department of Pathology, University of the West Indies, Mona (UWI), the only centre offering processing of medical kidney biopsies locally. All native kidney biopsies with ≥10 glomeruli per high power field; light microscopy and immunofluorescence were included. Demographics, clinical and laboratory data and pathologic features (International Society of Nephrologists/Renal Pathology Society 2003 Class of LN) were abstracted from the medical records. Response was defined as either a complete or partial response to treatment using Kidney Disease Improving Global Outcomes (KDIGO) guidelines definitions for LN. Summary statistics were used to describe baseline data. T tests and chi square tests or the appropriate non-parametric tests were used to assess differences between responders and non-responders. Multivariable logistic regression was used to determine risk factors for treatment response.