Letter to the Editor

Clinicopathologic study of IgM nephropathy in children presenting with idiopathic nephrotic syndrome in Pakistan

Madam, IgM Nephropathy (IgMN) is a newly described, albeit controversial entity which manifests mainly as idiopathic nephrotic syndrome (INS) in children and adults. It was first described by two independent groups of investigators in 1978.[1,2] Since then, many studies have been conducted on this disease with conflicting results mainly due to variable criteria used for the diagnosis.[3-7] The disease is defined immunohistochemically by the presence of IgM as the sole or predominant immunoglobulin with or without other immunoglobulins and complement components in the glomerular mesangium.[3] We have earlier reported a prevalence of IgMN of 10.37% in renal biopsies from children with INS.[8] It constituted 8.6% of all native renal biopsies in children presenting with different renal syndromes.[9] However, there is a lack of detailed clinicopathologic studies on IgMN in Pakistan. Herein we present our preliminary experience of this entity in children presenting with INS at our center. We reviewed our 14 years' native renal biopsy record (1995-2009) and identified 138 cases of IgMN in children (≤ 17 years).Their biopsy reports and case files were reviewed and relevant data recorded. The biopsies were studied by light microscopy (LM) and immunoflourescence (IF). Diffuse predominant mesangial positivity of IgM of at least 2+ intensity on IF was used for diagnosis of IgMN in this study. Mean age of this cohort was 7.62 ± 4.22 years. Males were 68.1% and females were 31.9%. Male to female ratio was 2.1:1. All children presented with NS; steroid response pattern was steroid dependent NS (SDNS) in 66 % and steroid resistant NS (SRNS) in 34%. Haematuria was found in 47 cases (34%) and hypertension in 27 (19.5%). Thirty (21.7%) children were also found to have renal dysfunction at the time of presentation. Regarding LM findings, total number of glomeruli included was 16.47 ± 8.00 per biopsy. The most common morphologic pattern consisted of mesangial proliferative GN, found in 54 (39.1%), mostly of mild to moderate degree. Minor changes were seen in 46 (33.3%) cases. Focal segmental glomerulosclerosis was found in 38 (27.5%) cases. The cases with focal and segmental glomerulosclerosis (FSGS) showed diffuse mesangial positivity of IgM in contrast to nonspecific, segmental trapping of IgM in idiopathic FSGS. Tubular atrophy and interstitial scarring was mild in 57 cases (41.3%) moderate in 8 (5.8%), severe in 1 (0.7%) and no tubular atrophy was seen in 72 (52.2%) cases. Mild fibrointimal thickening of arteries was seen in 6 (4.3%) cases.

Immunoflourescence (IF) showed diffuse mesangial positivity of IgM in all cases. The intensity was 2+ in 97 cases (70.3%), 3+ in 39 (28.3%) and 4+ in 2(1.4%). Concomitant but not dominant deposits of IgA and IgG were found in 8 (5.8%) and 4 (2.9%) cases respectively. C3 and C1q were found in 74 (53.6%) and 42 (30.4%) cases respectively.

In conclusion, this is the first report from Pakistan on IgMN and largest series in the world in children presenting with INS reported till date. The previous largest series reported from Finland included 110 patients.[4] Our cohort is being followed to determine the long term outcome of this disease. Our results show that IgMN is not an uncommon cause of INS in children of Pakistan. It shows a spectrum of morphologic changes ranging from minor changes to segmental glomerulosclerosis. IMF is indispensable for its diagnosis. It is predominantly a steroid dependant disease in children.

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