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Clinicopathological spectrum of native renal biopsies in paediatric population: a five-year review from a single institute in Sri Lanka

L. N. Rahubaddha, C.M. Baranasuriya, H. D. Wijesinghe, M. V. C. De Silva

Department of Pathology, Faculty of Medicine University of Colombo, Sri Lanka

Introduction and objectives: Renal biopsy is of importance in the management of many renal diseases in children. The objective was to describe the clinicopathological features of native renal biopsies (NRB) in paediatric patients.

Methodology: All NRB of paediatric patients (=<18 years) reported by the Department of Pathology, Faculty of Medicine, University of Colombo, from January 2017 to March 2022, were included. Clinicopathological information was retrieved from the request forms and histopathology reports. The light microscopic assessment was carried out in routinely stained sections of all cases, and immunofluorescence findings were included when available.

Results: A total of 338 routinely stained NRB (177 males and 161 females) were analysed, and immunofluorescence was available in 22.5% (n=76). The mean age was 9.78 years (s=4.60, range=10 months to 18 years). The majority (56.5%, n=191) presented with nephrotic syndrome/nephrotic range proteinuria (NS/NRP) and 9.5% (n=32) had sub nephrotic proteinuria (SNP), 8.0% (n=27) had nephrotic/nephritic mixed picture (NNMP), 8.0% (n=27) had elevated serum creatinine, 5.9% (n=20) had isolated haematuria and 5.6% (n=19) had nephritic syndrome (NeS). 53.9% (103/191) of NS/NRP cases showed minimal change disease (MCD), and 3.7% (7/191) showed focal segmental glomerulosclerosis. 57.9% (10/19) of NeS cases showed acute diffuse proliferative glomerulonephritis (ADPG). 33.3% (9/27), 25.9% (7/27) and 14.8% (4/27) of NNMP showed ADPG, lupus nephritis (LN) and mesangioproliferative glomerulonephritis, respectively. Biopsies of 35% (7/20) patients with isolated haematuria were normal on morphology, and 30% (6/20) showed mesangioproliferative glomerulonephritis. Most patients with SNP showed LN (31.3%;10/32). 28.1% (9/32) showed normal morphology and were inconclusive due to the lack of immunofluorescence and electron microscopy. 10.4% (35/338) of all biopsies were of LN, in which the commonest clinical presentations included SNP (28.5%,10/35), NS/NRP (22.8%,8/35) and NNMP (20%, 7/35). The Class IV was the predominant class (60%;21/35), followed by class II (14.3%;5/35). 50% (4/8) presenting with NS/NRP were class IV.

Conclusion: NS/NRP was the commonest indication for renal biopsy in children in whom the commonest histomorphological change observed was MCD.

Keywords: native renal biopsy, paediatric, nephrotic syndrome, minimal change disease

Corresponding author: Ms Lakma Rahubadda
Department of Pathology, Faculty of Medicine, University of Colombo, Sri Lanka
lakrahubaddha@gmail.com