1219 - P1.176

KIDNEY BIOPSY IN CHILDREN WITH PROTEINURIA

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Proteinuria usually indicates a disturbance in glomerular barrier and may be an important sign of kidney disease. Asymptomatic proteinuria is thought to be a relatively common urinary abnormality in children. Kidney biopsy is not routinely indicated for patients with isolated proteinuria and there is little known about the impact of kidney biopsy on differential diagnosis and prognosis of glomerular involvement.

The aim - analysis of kidney biopsies has been done at tertiary hospital over 2022-2023 years in patients with persistent proteinuria.

Materials and Methods: Initial kidney biopsies were performed in 17 children aged 6 to 17 years, with persistent (more than 12 months) proteinuria (mean 9.6 ± 1.9 months). The diagnosis based upon the presence of abnormal ranges of protein:creatinine ratio (PCR) > 200 mg/g in morning specimen. A transient or orthostatic proteinuria were exluded before a kidney biopsy. Each patient was instructed to empty their bladder just before bed time and to collect urine immediately upon rising the next morning (the first urine specimen). Renal tissue was obtained by needle biopsy under ultrasound guidance. Renal biopsy specimens were investigated by routine light, immunofluorescence and electron microscopy. All biopsy specimens were examined and diagnosed by one of the study investigators.

Results: The renal histopathology revealed focal segmental glomerulosclerosis (FSGS) (n = 4), diffuse mesangial proliferative glomerulonephritis (n = 7), IgA nephropathy (n = 2), systemic lupus nephritis (n = 2), Alport syndrome (n = 1), thin basement membrane disease (n = 1).

Among isolated proteinuria cases and PCR ranged 200-2000 mg/g only one patient diagnosed with FSGS and 5 patients with mesangial proliferative glomerulonephritis. Those with higher level of proteinuria (PCR ≥ 2000 mg/g) 3 patients diagnosed with FSGS and 1 patient with mesangial proliferative glomerulonephritis, 2 patients with systemic lupus nephritis. Patients combined proteinuria with hematuria presented with IgA nephropathy (2 cases), mesangial proliferative glomerulonephritis (1 patient), Alport syndrome 92 patients) and 1 cases of thin basement membrane disease.

Conclusion: Renal biopsy may be indicated to clarify the cause of glomerulopathy those with proteinuria persists longer than 1 year. There is a high likelihood of detecting significant renal pathology in children with proteinuria lasts for 1 year, which may negatively affect a long-term prognosis.