

Steroid response pattern and outcome of pediatric idiopathic nephrotic syndrome: a single-center experience in northwest Iran

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Aims: Characteristics of nephrotic syndrome (NS) in children varies in different geographical areas based on genetic and environmental factors. The aim of this study is to evaluate the steroid response pattern and outcome of idiopathic NS (INS) in a pediatric referral hospital in northwest Iran.

Methods: Medical records of all admitted children under 14 years of age with INS in the Children's Hospital of Tabriz, Iran, from 1999 to 2010 were studied retrospectively. Demographics, pattern of response to medications, recurrence rate, histopathology, and outcome were documented.

Results: A total of 165 patients with INS, with a mean age of 4.98 ± 2.61 years were studied. Male to female ratio was 2:1. Duration of follow-up was 5.36 ± 2.2 years (1–10 years). A total of 124 patients (75.2%) responded to steroids, and 41 patients (24.8%) were steroid resistant. Frequency of hematuria ($P = 0.01$) and steroid resistance ($P = 0.005$) in girls was significantly higher than boys. Patients with steroid resistance had a higher frequency of hematuria ($P = 0.001$) and a higher mean age ($P = 0.017$) in comparison with steroid responders. Renal biopsy carried out in 49 patients (29.7%) revealed minimal change in NS in 20 (40.8%), focal segmental glomerulosclerosis in 16 (32.7%), and mesangial proliferation in 11 (22.5%) patients. Twenty-two steroid resistant patients (13%) achieved remission with other immunosuppressives. Nineteen patients (11.5%) were resistant to all treatment modalities; of these, nine (5.4%) progressed to end-stage renal disease, and 10 (6%) continued nephrotic range proteinuria. Seven patients (4.2%) died. Of the 146 patients who achieved remission with any one of the treatment modalities, 91 patients (62.3%) experienced at least one recurrence episode, 15 patients (10.3%) were frequent relapsers, and 12 patients (8.2%) were steroid dependent. Higher age at onset of NS was associated with lower relapse rate ($P = 0.04$).

Conclusion: Demographics, histological features, and outcome of INS in our area were similar to western countries. In the present study, risk of steroid resistance was higher in girls than boys.

Keywords: nephrotic syndrome, steroid resistance, relapse

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