CLINICOPATHOLOGICAL STUDY OF STEROID RESISTANT NEPHROTIC SYNDROME IN CHILDREN ATTENDING ALEXANDRIA UNIVERSITY CHILDREN'S HOSPITAL

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Introduction

Nephrotic syndrome (NS) is the most common glomerular disease in pediatric age group. The most convenient way to classify idiopathic NS is to do so based on clinical response to corticosteroid therapy into steroid-sensitive and steroid-resistant NS(SRNS).Failure to respond to steroids is one of the most important predictors of clinical outcome. Unfortunately, the rate of progression to end stage kidney disease among SRNS patients was recorded to be up to 30-40%.

Aim of the work

The aim of this work was to perform a clinicopathological study of SRNS in children attending Alexandria University Children's Hospital.

Subjects and Methods

We performed a retrospective study on 51 primary idiopathic SRNS cases presenting between January 2011 and June 2021 by retrieving data from their clinic files. Cases with secondary causes of NS or suspected genetic cause were excluded from our study. Patients' demographic data, clinical and laboratory findings at the time of presentation, complications occurring during the course of treatment, immunosuppressants used along with steroids and outcome at last follow up were recorded. The mean duration of follow up was 5.67 ± 3.07 years.

Results

Our results showed that there was male predominance (2.9:1), the mean age at first presentation was 4.53 ± 3.03 years, persistent hematuria and systemic hypertension at presentation were found in 41.6% and 57.1% respectively. The 3 most common complications reported in our patients were cushingoid appearance (17.6%), suppressed growth velocity (17.6%), and recurrent infections (15.7%).

The most common biopsy finding was mesangioproliferative glomerulonephritis (MesPGN) (37.3%). There was also a significant difference (p value = 0.005) in the prevalence of MCNS between patients presenting at an age of 2-6 years old (40.6%) or >6 years old (0%).
Regarding treatment, the most utilized immunosuppressant was cyclosporine (80.4%). Complete remission was fortunately the most prevalent outcome amongst our cases (52.2%), however relapsing course remains to be a challenge in most of them (66.7%). MCNS finding in biopsy is significantly correlated with complete remission (p value= 0.043). Persistent hematuria whether gross or microscopic was significantly correlated with unremitting disease (p value= 0.017).

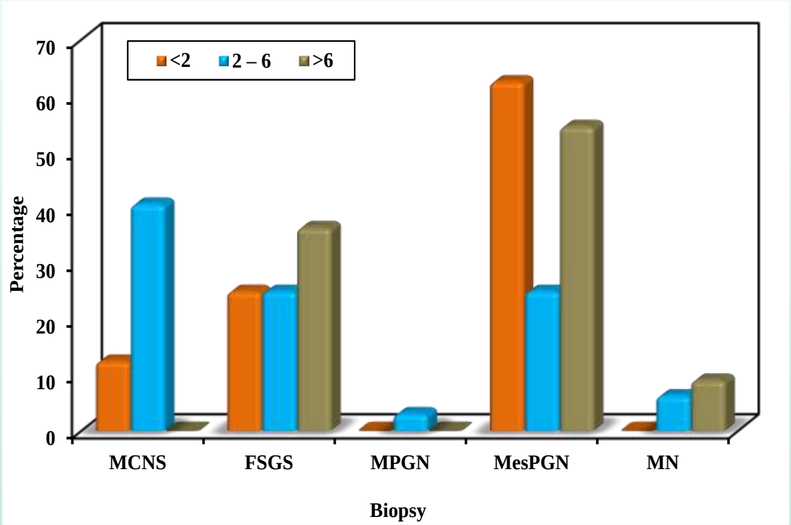

Figure 1: Analysis of age of onset and renal biopsy finding. MCNS, minimal change nephrotic syndrome; FSGS, focal Segmental glomerulosclerosis; MPGN, membranoproliferative glomerulonephritis; MesPGN, mesangioproliferative glomerulonephritis; MN, membranous nephropathy.

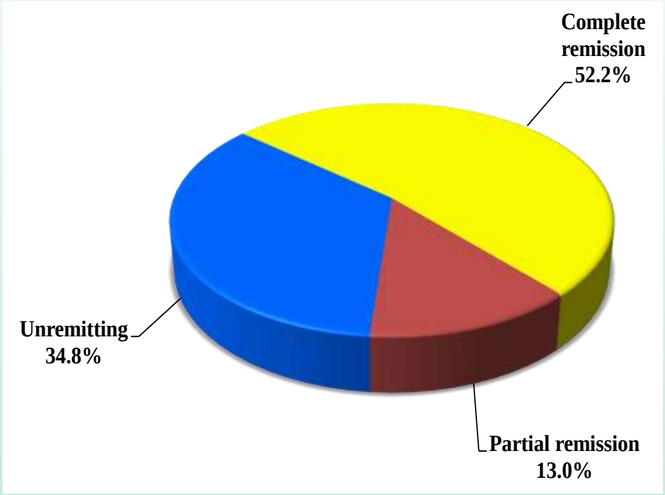

Figure 2: Distribution of the studied cases according to outcome at last follow up

Conclusion

Our study concluded that biopsy findings and presence of hematuria in SRNS cases are the most crucial factors in determining final outcome. Complete remission however is achievable in most cases with the introduction of immune-suppressive treatment.