

Letter to the Editor

Meanings of microalbuminuria in idiopathic nephrotic syndrome in children

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Abstract

We investigated the existence of microalbuminuria in children with corticosteroid-sensitive idiopathic nephrotic syndrome in complete remission. In the study of a series of 18 cases, we noted a clearly different evolution depending on the existence or absence of pathological microalbuminuria.

Microalbuminuria appears to be a prognostic discrimination parameter in idiopathic nephrotic syndrome.

Introduction

Microalbuminuria is an early marker of renal dysfunction and cardiovascular risk [1]. The place of microalbuminuria has never been discussed in nephrotic syndrome. This study suggests a correlation between microalbuminuria and idiopathic nephrotic syndrome in children.

Patients and methods

We followed 18 children with primary nephrotic syndrome for 4 years.

We have included in the study:

Children who had nephrotic syndrome defined as:

- Proteinuria greater than or equal to 50 mg/kg/day

Excluded were children with inflammatory diseases, infectious diseases, and secondary nephrotic syndrome.

All children were treated with prednisone then 2 mg/kg/2 days, then 2mg/kg/2days as soon as the proteinuria was negativated.

The parameters studied were:

- 24 hours proteinuria

In all the children we performed a monthly dosage of 24-hours proteinuria.

In children who had negative proteinuria during the course of treatment we performed the microalbuminuria

More Information

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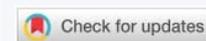
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assay. We used the ratio of microalbuminuria to creatinuria on one micturition and considered positive a ratio higher than 200 mg/mmol; we performed 2 to 3 determinations in all children.

Microalbuminuria was then measured once a month at the same time as proteinuria in children who had consistently negative proteinuria throughout the course of the disease.

Creatinine and uroculture were also performed on a monthly basis.

Results

12 children between the ages of 6 and 14 were selected.

5 children had negative proteinuria and negative microalbuminuria (Group 1), and 7 children had negative proteinuria and positive micro albuminuria (Group 2).

Group 1: The evolution was marked by a persistent negative proteinuria and negative microalbuminuria after 24 months (2 children) and 30 months (3 children) follow-up.

Group 2: The evolution was marked by corticoid dependence or corticoid resistance.

4 children had developed a corticoid dependence characterized by 2 consecutive relapses when the corticosteroids were withdrawn, or 2 weeks after they were stopped.

2 children progressed to corticosteroid resistance defined by the persistence of nephrotic syndrome after 4 weeks of well-conducted conventional treatment and despite the use of a 15 mg/kg/day corticosteroid bolus for 3 days.

1 child experienced partial remission characterized by the recurrence and persistence of low proteinuria of less than 10 mg/kg/day.

Discussion

There are no reported studies evaluating microalbuminuria during pediatric nephrotic syndrome.

Microalbuminuria is a sign of generalized endothelial dysfunction.

Nephrotic syndrome is caused by damage to the glomerular basement membrane and podocyte cells [2].

Minimal Glomerular Lesions is the most common form of primary nephrotic syndrome in children; it is corticosteroid-sensitive in almost 90% of cases but is multi-recurrent [3].

Microalbuminuria found during the remission phase of proteinuria would be predictive of an unfavorable evolution. Negative microalbuminuria associated with negative proteinuria would be a favorable element.

Several hypotheses are put forward to explain microalbuminuria of nephrotic children. Are these children born to hypertensive parents? The existence of microalbuminuria in these children has been reported [4].

Are they atopic children? Atopy could be a vascular risk factor [5].

Are there Segmental Focal Hyalinosis lesions? Resistant or recurrent Minimal Glomerular Lesions are sometimes associated with Segmental Focal Hyalinosis lesions.

Negative microalbuminuria could be related to exclusive Minimal Glomerular Lesions? And the presence of microalbuminuria suggestive of Segmental Focal Hyalinosis lesions or corticosteroid-resistant nephrotic syndrome.

Conclusion

Microalbuminuria appears to be a prognostic discrimination parameter in idiopathic nephrotic syndrome in children.

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