A SYSTEMATIC REVIEW OF RITUXIMAB TREATMENT FOR RELAPSING MINIMAL CHANGE DISEASE AND FOCAL SEGMENTAL GLOMERULOSCLEROSIS.

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OBJECTIVES

Minimal change disease (MCD) and focal segmental glomerulosclerosis (FSGS) are common causes of nephrotic syndrome in children and adults. Rituximab (RTX) has emerged as an alternative treatment of childhood frequently relapsing, steroid-dependent or steroid-resistant nephrotic syndrome not responding adequately to standard immunosuppressants [1].

We conducted a systematic review to identify the literature published on patients with frequently relapsing and steroid-dependent MCD and FSGS treated with RTX in order to determine whether RTX therapy in these indications is associated with a reduction in the rate of relapses and the need of concomitant immunosuppressive medication.

METHODS

A systematic literature search of the Medline and Embase databases was conducted, using the key words 'nephrotic syndrome', 'minimal change disease', 'focal segmental glomerulosclerosis' and 'rituximab'. Additional studies were identified via studying the references of the retrieved articles.
A.K. performed the search, extracted and reviewed the obtained data, according to a pre-specified protocol. Extracted data included: age at first diagnosis, age at first application of RTX, gender, serum creatinine, proteinuria, and diagnosis of MCD or FSGS. The intensity of concomitant immunosuppressive therapy was analyzed using a semi-quantitative score system by summarizing the different immunosuppressive strategies prior to and after RTX administration.
The number of relapses before and after RTX (median per year) was evaluated.
Significance level was set to $p < 0.05$ and statistical analysis was performed with SPSS 21 for Windows (SPSS Inc.).

	Before RTX	After RTX	p-value
Number of relapses per year	1.3 (0-9)	0 (0-2)	<0.001
Number of immunosuppressives	2 (0-5)	0 (0-2)	<0.001
Proteinuria (g/d)	2.43 (0-15)	0 (0-4.89)	<0.001
Serum albumin (g/l)	2.90 (1.20-4.60)	4.00 (1.80-5.09)	0.001

	Relapse-free	With relapse	p-value
Male gender	37.0 %	53.8 %	0.436
Duration of disease (years)	10 (1-39)	14 (2-30)	0.339
Sum score of IS	2 (0-5)	3 (1-5)	0.018
Serum albumin	3.1 (1.4-4.6)	2.23 (1.2-3.2)	0.018
Proteinuria	1.48 (0-15)	4.03 (0-11.25)	0.051
MCD	94.4 %	84.6 %	0.206
Age at first diagnosis	16 (1-60)	16 (2-63)	0.771
Age at first RTX	26 (19-70)	29 (18-73)	0.232
Number of relapses before RTX	2 (0-9)	2 (1-6)	0.687

RESULTS

Out of those 80 patients, 78 achieved at least partial remission, while 2 patients were non-responsive to RTX treatment. The median follow-up time was 12 (6–70) months. A significant reduction of the rate of annual relapses was observed following RTX therapy. The median relapse rate prior to treatment with RTX was 1.3 (0–9) per year and it was reduced to 0 (0–2) relapses per year after treatment with RTX ($p < 0.001$).

54 out of 81 patients with a follow-up time of at least 12 months were free from clinical relapses. Analysis of baseline characteristics between patients with subsequent relapse and those without relapse revealed that patients with one or more relapses had a higher number of immunosuppressives used prior RTX ($p = 0.018$) and serum albumin was lower compared to patients without relapse ($p = 0.018$) [2].

CONCLUSIONS

This systematic review shows an efficacy of RTX in adult patients with frequently relapsing or steroid-dependent nephrotic syndrome. A high proportion of patients included herein had underlying MCD. Thus, more experience reporting on RTX in adult FSGS is warranted.
Overall, the rate of annual relapses and the number of immunosuppressants used in patients receiving RTX were significantly reduced. Due to an acceptable safety profile RTX represents a promising alternative treatment in these patients. Further controlled prospective trials are necessary to confirm these results.

REFERENCES:

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