

URINARY ALPH-1 BETA GLYCOPROTEIN: A PROMISING PROGNOSTIC MARKER IN CHILDHOOD NEPHROTIC SYNDROME

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OBJECTIVES

The course of childhood nephrotic syndrome has been puzzling pediatric nephrologists for so long and not a single, non invasive test proved to be of value in the initial prognostic view of the disease. The aim of our work was to explore any correlation between urinary levels of alpha-1 beta glycoprotein (A1BG) in patients with childhood nephrotic syndrome, and responses to steroid treatment, in the search for a possible prognostic, non invasive test for the disease.

Subjects

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Methods

This cross-sectional study included 75 patients with childhood nephrotic syndrome and normal renal functions (52 males and 23 females), mean age was 8.23±2.4 years and disease duration was 4.2±1.6 years. 16 age and sex matched non proteinuric children acted as control group. Urine and clinical data were collected from patients and urinary levels of A1BG were determined using enzyme-linked immunosorbent assay (ELISA) technique blood samples were withdrawn for assessment of serum creatinine, albumin and total proteins.

Urinary alpha 1 beta glycoprotein

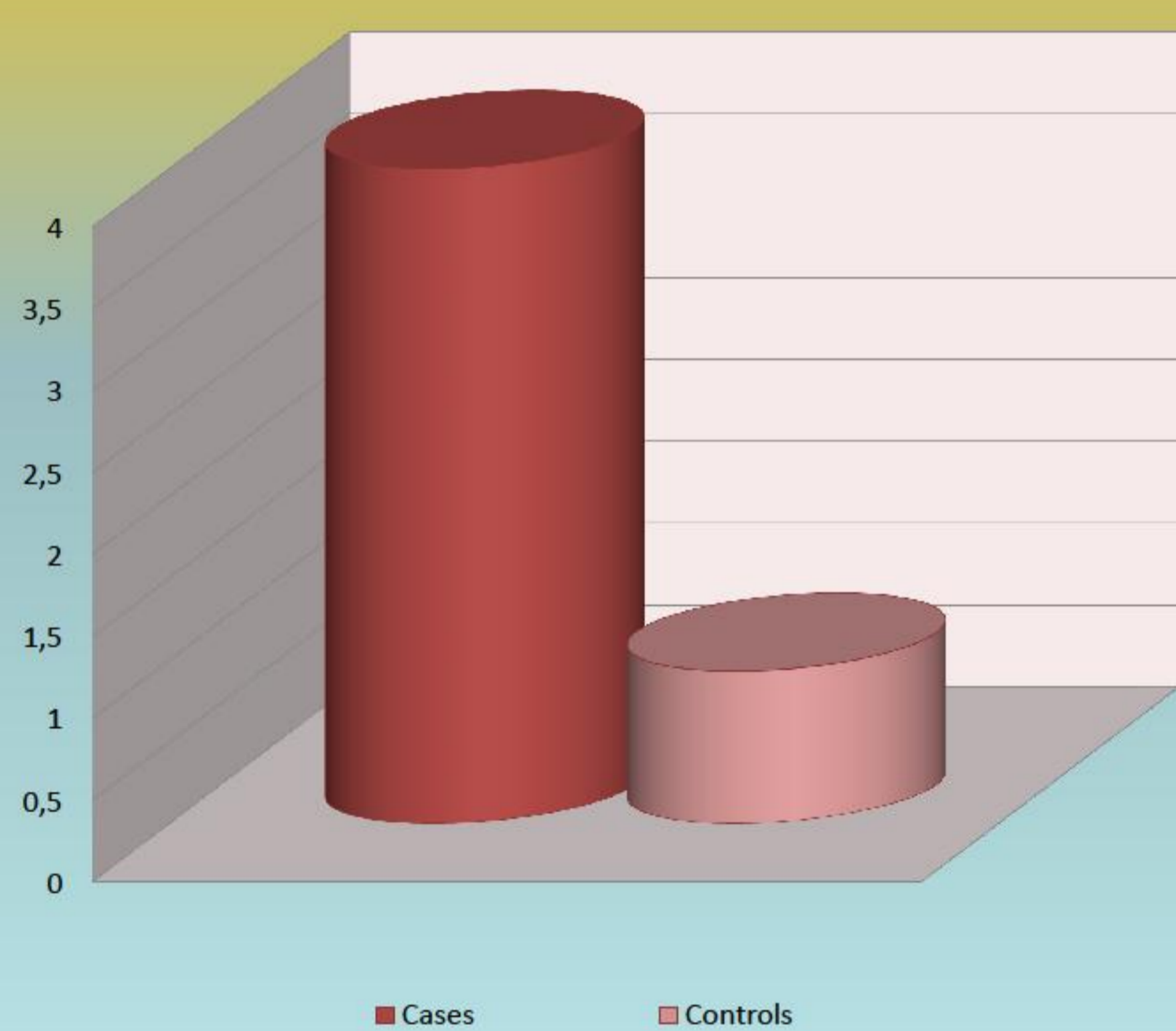


Fig 1:- Urinary levels of A1BG in Cases and Controls

Results

The urinary levels of A1BG were found significantly higher in patients with steroid resistant nephrotic syndrome compared to patients with steroid sensitive nephrotic syndrome or controls regardless the degree of proteinuria ($p < 0.001$). No significant difference in the urinary levels of the marker was detected between different types of steroid responsive nephrotic syndrome (infrequent relapsers, frequent relapsers and steroid dependent). No significant correlation was detected between urinary A1BG and age, gender, serum albumin, total serum proteins or protein/creatinine ratio.

Urinary alpha 1 beta glycoprotein

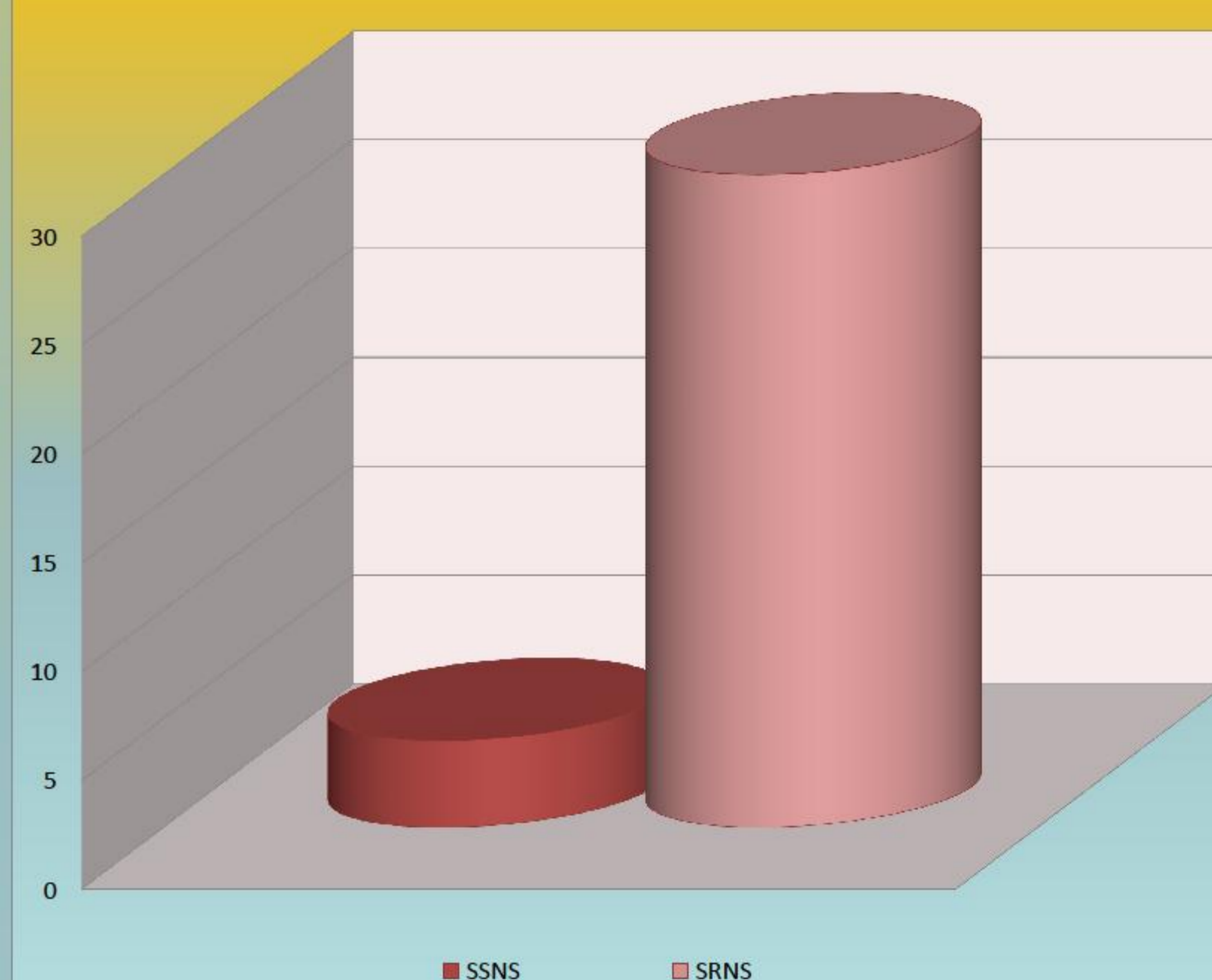


Fig 2:- Urinary levels of A1BG in SSNS and SRNS

	+1	+2	+3	P
SSNS (Median)	3	4	4.5	0.156
(Range)	(2-3)	(2-6)	(2-6)	
SRNS (Median)	29	27.5	30	0.65
(Range)	-----	(15-34)	(10-33)	

Table 1:- Comparison of urinary A1BG between subclasses of proteinuria

	Alpha 1β Glycoprotein	
	Correlation Coefficient	Sig. (2-tailed)
Age	.024	.836
Disease Duration	-.037	.752
Creatinine	.193	.097
s.albumin	-.102	.384
Total proteins	-.068	.560
Pr./Creat.	.131	.262

Table 2:- Correlations between urinary A1BG and demographic and laboratory data

Conclusions

Urinary A1BG is a promising, non invasive, possible prognostic biomarker that can predict steroid response during the initial phase of treatment of childhood nephrotic syndrome and is not apparently influenced by the degree of proteinuria. Further longitudinal studies are required to prove its efficiency in this field

