EVALUATION OF OXIDATIVE STRESS IN PRIMARY GLOMERULONEPHRITIS WITH SERUM LEVEL OF IN ISCHEMIA MODIFIED ALBUMIN (IMA)

Aysegül Oruc[1], Hacer Ebru Acıkgoz[2], Nimet Aktas[3], Abdulmecit Yıldız[3], Cuma Bulent Gul[3], Guven Ozkaya[4], Mustafa Gullulu[3]

[1] Yozgat State Hospital, Yozgat, TURKEY
[2]Uludag University Faculty of Medicine, Department of Biochemistry, Bursa, TURKEY
[3]Uludag University Faculty of Medicine, Department of Nephrology, Bursa, TURKEY
[4]Uludag University Faculty of Medicine, Department of Statistics, Bursa, TURKEY

Glomerulonephritis, are a group of diseases with different etiopathogenesis. The etiopathogenesis is not yet fully understood but there are factors which are thought to be responsible such as autoimmunity, enfections, drugs, genetic predisposition. It has been shown that oxidative stres (OS) which is described as the inbalance of oxidative and antioxidative systems towards oxidant materials plays role in the pathogenesis of GN.

A lot of factors have been described as signs of OS. The albumin fraction with a decreasing capacity of binding metals in the N terminal end is called Ischemia Modified Albumin (IMA). It has been identified as a sign of OS in many studies. IMA has been shown to be high in many diseases like acute coronary syndrome and diabetic nephropathy in which ischemia is a part of pathogenesis. But it has not been studied in patients with GN in the literature. We aimed to determine the role of IMA in the pathogenesis of GN in our study.

Materials and Methods

Fortyfive patients diagnosed with primary GN by biopsy were included in the study. They were divided into two groups as proliferative GN (PGN) (n: 17, %37,5) and non-proliferative GN (NPGN) (n: 28, %62,2) according to histopathological diagnosis. IMA was studied by cobalt binding method. Since serum albumin levels are commonly low in patients with GN, we calculated adjuested IMA (aIMA) according to serum albumin concentrations.

Results

There was no difference between the two groups in terms of IMA values when basal levels were compared with controls (n: 50). aIMA was significantly higher in the PGN group compared with the control and NPGN groups (p: 0.009, 0.037). IMA and aIMA (p:0.011, 0.009) levels of 34 patients treated with special therapy in weeks 8 and 12 were significantly lower than basal levels. The percentage difference of IMA and aIMA levels in PGN and NPGN patients after treatment was not significantly different between the two groups. There was significant difference in aIMA levels only in the PGN group after treatment. There was negative correlation between serum albumin concentration and IMA.

Conclusions

The results in our study supports the important role of OS in the pathogenesis of primary GN. OS which is more prominent in PGN may be related with progressive renal damage. Our study supports the role of OS in patients with primary glomerulonephritis while oxidative stres is more prominent in patients with PGN compared to NPGN.

Table 1. Demografic data and basal laboratory results of groups

	Control (n: 50,ort±SD)	PGN (n: 17, ort±SD)	NPGN (n: 28, ort±SD
Age (years)	34,9 ±10,2	39,1±15,5	42,3±14,3***
Gender (M/F)	24/26	10/7	18/10
Serum Urea (mg/dL)	26,7±7,6	76,2±63,1*	37,2±19***
Serum Creatinin (mg/dL)	0,7±0,1	2,9±3,9*	0,9±0,4
eGFR (MDRD) (ml/dak/1,73 m^2)	118,2±17,3	63,4±52,4*	106,5±38,7
IMA (ABSU)	0,488±0,111	0,548±0,175	0,490±0,133
aIMA (ABSU)	0,488±0,111	0,579±0,227***	0,478±0,149

Table 2. Comprassion of IMA levels before and after treatment

	Before treatment (n: 34,ort±SD)	After treatment (n: 28, ort±SD)	p
İMA (ABSU)	0,499±0,144	0,395±0,155	0.011
d-İMA (ABSU)	0,457±0,117	0,372±0,129	0.009

eGFR: estimated glomerülar filtration rate, IMA: Ischemia Modified Albumin , aIMA: adjuested IMA , ABSU: absorbans unit, SD: standart deviation. *p<0,001 , **p = 0.001 , *** p < 0,05

DOI: 10.3252/pso.eu.51era.2014
Poster presented at: 51 ERA-EDTA CONGRESS AMSTERDAM THE NETHERLANDS MAY 31 - APRIL 2014
PosterSessionOnline.com