



# OXIDATIVE STRESS AS A PREDICTOR OF PROGRESSION IN IGA NEPHROPATHY



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## INTRODUCTION AND AIMS

Inflammation and oxidative stress have been suggested in the pathogenesis of IgA nephropathy (IgAN). The aim of the present study was to assess the activation of the oxidative stress pathway by measuring advanced oxidation protein product (AOPP) levels in patients with IgAN.

## METHODS

A total of 115 IgAN patients [67 (58%) male, mean age: 37±12 years, median follow up of 26 months (IQR 13-48)] were evaluated. Serum AOPP and galactose deficient IgA1 (Gd-IgA1) levels of IgAN patients were compared with control membranous nephropathy (MN) [n=28, 21 (75%) male], focal segmental glomerulosclerosis (FSGS) [n=20, 9 (45%) male], Lupus nephritis [n=10, 1 (10%) male] patients and healthy subjects [n=31, 17 (55%) male]. Serum Gd-IgA1 levels of patients were measured using KM55 ELISA assay. The relationship between serum AOPP and Gd-IgA1 levels and progression to kidney failure [category G5 chronic kidney disease (CKD)] was also assessed.

## RESULTS

Serum AOPP levels of IgAN patients (1394±1149 µM) were significantly higher than MN patients (698±393 µM), FSGS patients (547±325 µM), Lupus nephritis (397±157 µM) and healthy subjects (427±200 µM) (p=0.003, p=0.001, p=0.007 and p<0.001, respectively). Gd-IgA1 levels of IgAN patients (9966±8487 [log10:3.83±0.42] ng/µL) were significantly higher than MN patients (4173±6319 [log10:3.27±0.52] ng/µL) and healthy subjects (4321±3354 [log10:3.49±0.36] ng/µL) (p<0.001 and p=0.001, respectively). After a median follow up time of 26 months, 31 (27%) patients progressed to kidney failure. Serum AOPP levels of IgAN patients were not significantly different between IgAN patients progressed and not progressed to kidney failure (1298±981 vs 1655±1505 µM). Serum AOPP levels were significantly correlated with glomerular C3 deposition (r=0.236, p=0.012). In the Cox regression analysis, serum AOPP levels (log10) (HR=1.42, p= 0.042) and eGFR at the time of biopsy (HR: -0.052, p= 0.001) were the markers that predicted progression to kidney failure in IgAN patients.

## CONCLUSIONS

Serum levels of Gd-IgA1 and AOPP are elevated in patients with IgAN. Serum AOPP levels are associated with the intensity of glomerular C3 and predicted the progression of IgAN.

