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Glomerular disease

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GDF 15 as a novel biomarker in patients with IgA nephropathy

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Background: No prognostic biomarkers have been identified for IgA nephropathy. Growth differentiation factor 15 (GDF 15) is a member of the transforming growth factor-β superfamily and could be a useful disease severity and prognostic marker in patients with IgA nephropathy.

Methods: Patients in a Chungnam National Hospital glomerulonephritis cohort, who were diagnosed with IgA nephropathy from March 2010 to June 2014, were included. Blood samples were stored at -80˚C. GDF 15 was analyzed using an enzyme-linked immunosorbent assay.

Results: GDF 15 correlated well with initial eGFR (R = −0.649) and mean serum GDF 15 level was correlated with chronic kidney disease (CKD) stage. A GDF 15 level > 496.32 pg/mL showed 90% sensitivity and 72.9% specificity for predicting the need for hemodialysis within 2 years of diagnosis and > 490.4 pg/mL showed 63.64% sensitivity and 65% specificity to predict a decline in eGFR > 30 ml/min in 1 year. In addition, initial serum GDF 15 level was associated with development of interstitial fibrosis/tubular atrophy.

Conclusion: Initial serum GDF 15 level was useful as a disease severity and prognostic biomarker in patients with IgA nephropathy.

Keywords: GDF15, IgA nephropathy