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AKI in immunoglobulin a nephropathy

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Objectives:

Acute kidney injury (AKI) is a widely known complication of IgA nephropathy. It has been suggested that AKI in IgA nephropathy develops mainly by severe immune injury and macroscopic haematuria. Renal biopsy and urine examination are commonly suggested for AKI patients. We performed current study to analyse urinary and biopsy features in IgA nephropathy with AKI.

Methods:

50 patients pathologically diagnosed as IgA nephropathy from March 2003 to January 2016 in Kostanay city hospital were included, constituting 8.9% (50/567) of total native renal biopsies. Renal biopsies were scored according to the current Oxford Classification. Midstream urine samples were collected and examined by manual microscopy on the morning before biopsy.

Results: The prevalence of AKI at biopsy time was 10.1%. Compared to non- AKI cases, AKI patients have higher levels of serum creatinine (median 173.3 vs 86.1 $\mu\text{mol/L}$, $P < 0.001$), urine protein excretion (median 3.94 vs 1.68 g/d, $P < 0.001$) and red blood cell count in urine (median 35 vs 18/HPF, $P = 0.015$), and a higher rate of macroscopic haematuria (41.2% vs 17.3%, $P < 0.001$). Higher prevalence of white blood cells (51.0% vs 28.8%, $P = 0.001$), urine tubular epithelial cells (17.6% vs 5.5%, $P = 0.001$) and granular casts (39.2% vs 21.7%, $P = 0.005$) were also observed in urine sediments of AKI patients. AKI patients had a significantly higher proportion with crescents in more than 25% of total glomeruli (score C2, 41.1% vs 13.5%, $P = 0.004$) and severe tubular atrophy/interstitial fibrosis (score T2, 39.2% vs 15.7%, $P < 0.001$). No significant differences in the degree of mesangial hypercellularity (M), endocapillary proliferation (E) and segmental sclerosis or adhesion (S) were found

Conclusions: AKI patients presented with more active urinary findings compared with non- AKI cases. The extent of crescents, interstitial fibrosis and tubular atrophy were associated with AKI in IgA nephropathy.