

Differential Impact of Multiple Myeloma on Renal Disease

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Abstract

Introduction & Objectives: Multiple Myeloma frequently causes renal damage through monoclonal protein production. This retrospective, single-center study compared the clinical severity of renal impairment between patients with Intact Immunoglobulin (IgG) and Isolated Light Chain (ILC) monoclonal bands.

Methodology: The study analyzed 155 patients (93 males, 62 females; mean age 60.2) using immunoelectrophoresis, serum creatinine, and eGFR measurements. Pathological assessments, including bone marrow and renal biopsies, were performed in selected cases to identify Cast Nephropathy (CN) and Amyloidosis (AI) and others.

Results & Discussion: The cohort exhibited advanced renal impairment with a mean serum creatinine of 5.02 mg/dl and a mean eGFR of 26.11 mL/min/1.73m². While both groups showed significant proteinuria, the ILC group (n=27) experienced substantially more severe dysfunction than the IgG group (n=128):

Creatinine: 53% higher in the ILC group (p = 0.003).

eGFR: Significantly lower in the ILC group (p = 0.003).

Biopsy data revealed that the IgG group had more diverse presentations, including AI and progressive glomerulonephritis. However, the ILC group showed a higher relative frequency of Cast Nephropathy.

Conclusion: Although the IgG group is larger, patients with Isolated Light Chains (ILC) present with more aggressive renal failure. This severity correlates with the higher prevalence of Cast Nephropathy within the ILC subset.

Keywords

Multiple Myeloma, Monoclonal Bands, Renal disorders.