

Acute renal failure in a patient with Waldenström's macroglobulinemia: Case report and literature review

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Introduction: Waldenström's macroglobulinemia (WM) is a rare lymphoid neoplasm, making up around 2% of all hematologic malignancies. While patients with WM often present with symptoms like cytopenias and hyperviscosity, renal insufficiency is less common compared to multiple myeloma (MM). We report a case of acute renal failure in a woman with newly diagnosed plasma cell dyscrasia.

Case presentation: CB, a 70-year-old woman with a history of NASH cirrhosis and hypertension, presented to the ER in Spring 2023 after her primary care provider noticed elevated creatinine levels (3.48 mg/dL) during routine tests. She complained of fatigue but denied other symptoms such as chest pain, dyspnea, lower extremity edema, or oliguria. Additional lab results showed BUN of 35, protein to creatinine ratio of 2.4 g/g, hemoglobin of 9.1 g/dL, and platelet count of 87,000. Serum free light chains showed a kappa/lambda ratio of 0.07. Monoclonal IgM lambda was detected (2.3 g/dL), with elevated urine free light chains. A bone marrow biopsy revealed lymphoid aggregates and interstitial plasmacytosis. Flow cytometry indicated monoclonal lambda light chain-restricted B-cell and plasma cell populations. PET/CT revealed diffuse osseous uptake, but no focal malignancy. The patient was diagnosed with WM and started on Zanubrutinib. Before treatment initiation, she became oliguric and required hemodialysis.

Conclusion: Though rare, renal involvement in WM has been increasingly reported. Unlike MM, there is no single defining renal lesion for WM nephropathy, which can present as proteinuria, hematuria, or light chain deposition disease. In this case, despite coexisting liver disease, her renal dysfunction was attributed to WM due to the presence of light chains in the urine. Factors associated with poor prognosis

in renal WM include age over 60, anemia, neutropenia, and elevated beta 2-microglobulin. Immediate treatment is recommended for WM-related kidney injury.

Keywords: Waldenström's macroglobulinemia, Acute Kidney Injury
