A Case of Membranous Nephropathy and the Ponticelli Regimen

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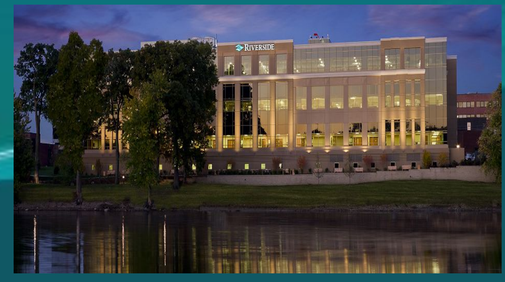

Background

Membranous nephropathy (MN) is the most common nephrotic syndrome in adults characterized by proteinuria, hyperlipidemia, and edema. The histology of MN consists of immune complex deposition in the subepithelial space. I present a case of a patient with MN.

Case Presentation

A 59-year-old male with chronic medical conditions of CKDIIIb, hypertension, hyperlipidemia comes in for elevated creatinine. The patient did not have any urinary symptoms. Creatinine was elevated to 4.5 on admission. Renal ultrasound was negative. Renal workup was positive for proteinuria on the urinalysis, protein-creatinine ratio of 10.7, elevated 24-hour protein of about 3.9 g, and positive anti-PLA2R. A kidney biopsy was done inpatient which revealed membranous nephropathy as well as interstitial nephritis and acute tubular necrosis.

Decision-Making

Patient was started on pulse-dose IV Solu-Medrol inpatient and was discharged with close follow up with nephrology. The long-term management for his MN was the Ponticelli regimen.

Membranous Nephropathy Histology

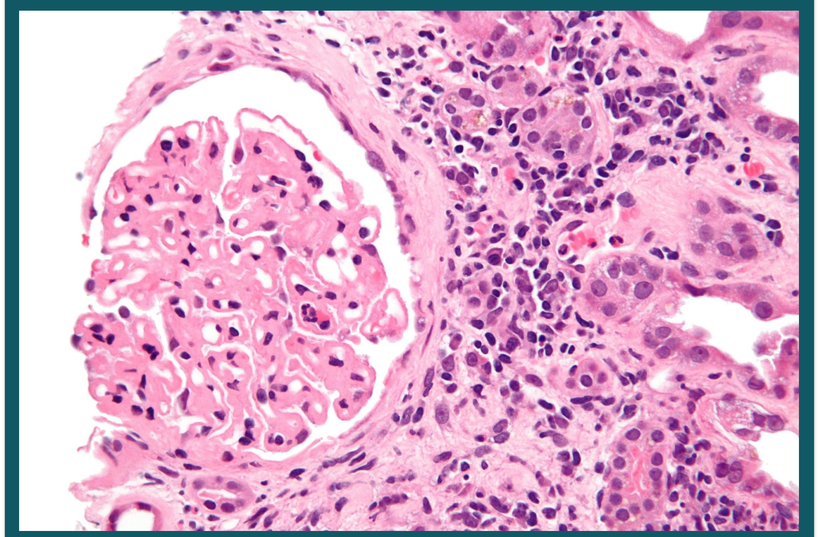

Figure 1: Microscopy showing the glomerulus and glomerulus basement membrane in membranous nephropathy

Conclusions

The Ponticelli regimen involves using steroids and cyclophosphamide in alternating months. A patient will receive three months of steroids alternating with three months of cyclophosphamide for a total of six months. The goal of following this regimen is to decrease the urine protein and avoiding long term kidney damage. In this case, the patient only followed up once in the fall of 2024 and renal workup revealed higher protein levels (5-6 g urine protein over a 24-hour period) and a protein creatinine ratio of 7.4. It is also important to be able to distinguish primary MN from secondary MN, In this case, it was clear that the patient had primary MN given the positive anti-PLA2R. However, sometimes the antigens are not positive and secondary causes need to be worked up including lupus, hepatitis, and HIV. Of note, there are also other antigens implicated in primary MN including THSD7A, NELL-1, Sema3B, and EXT1/2. If anti-PLA2R testing is negative and secondary causes are unrevealing, it be worthwhile to order these additional antigens.

References

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Disclosure Information

Nothing to disclose