Primary Membranous Nephropathy

Indications for Ordering

- Differentiate between primary and secondary membranous nephropathy (MN)
- Monitor therapy efficacy and disease status

Test Description

IgG autoantibodies against anti-phospholipase A2 receptor (PLA2R) are detected by indirect fluorescent antibody (IFA)
- Uses transfected and non-transfected cells (EU 90) as substrate

Tests to Consider

Primary test

**Phospholipase A2 Receptor (PLA2R) Antibody, IgG with Reflex to Titer 2011828**
- Aids in diagnosis of primary MN
- Reflexes to titer if initial antibody test is positive

Related tests

**Protein, Total, Urine 0020479**
- Aids in confirmation of nephrotic syndrome

**Albumin by Nephelometry 0050671**
- Aids in confirmation of nephrotic syndrome

**Comprehensive Kidney Biopsy Workup 2013259**
- Mandatory for diagnosis of MN

Disease Overview

Prevalence

- 1/100,000 for MN
- Secondary MN is most common diagnosis in nondiabetic adults with nephrotic syndrome
- Primary MN is most common cause of nephrotic syndrome in Caucasian males >40 years of age

Age of onset

- Peak incidence around the fourth and fifth decades of life
- Higher prevalence in males over females

Symptoms

- Hallmarks of disease
  - Edema
    - Most commonly in lower extremities and face
  - Nephrotic syndrome
    - Proteinuria found in all patients

Diagnostic issues

- Differentiation between primary and secondary MN is clinically important
  - Therapeutic strategies are different for each
  - End-stage kidney disease common in untreated patients

Pathophysiology

- MN – autoimmune disease that causes immune complex formation in glomeruli of the kidney
  - Immune complex formation activates complement to form membrane attack complexes
  - Membrane attack complexes damage renal epithelial cells
    - Glomerular inflammation, hematuria, and impaired renal function
  - Slowly progressive renal failure with nephrotic syndrome
- Antibodies associated with primary MN
  - ≥70% of cases are caused by anti-PLA2R autoantibodies (Beck, 2009)
  - Anti-PLA2R titers appear to correlate with disease activity and may have predictive value for
    - Posttransplantation monitoring
    - Monitoring therapy
- Secondary MN (20-30% of MN) is associated with
  - Infections
  - Cancer
  - Autoimmune disorders
  - Certain drugs

Test Interpretation

Results

- Positive – ≥1:10
  - Antibodies against PLA2R detected
    - Primary MN likely
- Negative – <1:10
  - No antibodies against PLA2R detected
    - Primary MN less likely but not excluded

Test Limitations

- Negative result does not rule out the diagnosis of primary MN
- Results should be used in conjunction with other laboratory tests and clinical findings
Reference