
PSGN

Acute glomerulonephritis

- Technically describes the pathologic process characterized by inflammation and/or cellular proliferation of the glomeruli not caused by direct infection of the kidneys.
- It classically manifests as an acute nephritic syndrome with hematuria, proteinuria, and evidence of volume overload.

Epidemiology

- Group A Streptococcus (GAS) has commonly been sub-typed by its surface M proteins, which help determine its virulence.
- It has been known that another protein, **serum opacity factor,** may be a determinant of secondary sequelae of GAS infection.
- ***Opacity factor–positive strains*** causes **glomerulonephritis**.
- ***Opacity factor–negative strains*** causes **rheumatic fever**.
- *The serotypes most associated with pharyngitis are M types 12, followed by 1, 4, and 25,*
- *Whereas types 49, 2, 42, 56, 57, and 60 cause skin infections.*

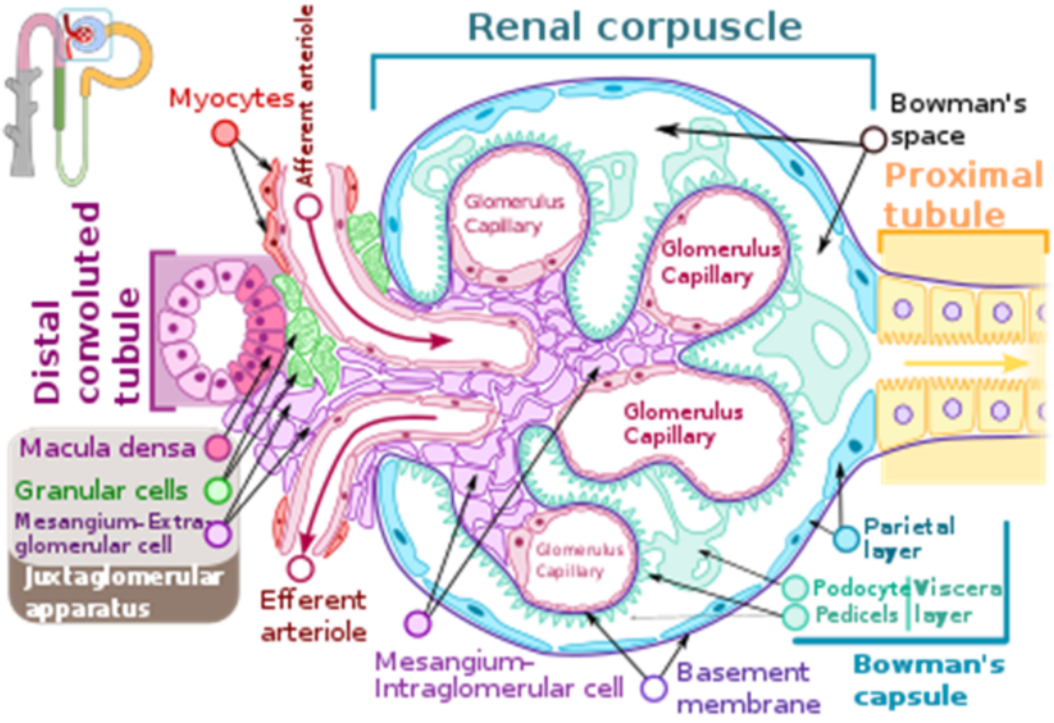
Mechanism of disease

- Formation of GAS antigen and antibody complexes in the circulation with subsequent trapping in the glomeruli.
- First depositionnof GAS antigens into glomerular components with subsequent antibody binding in situ.
- Some GAS antigens in the serum resemble components of the glomerular basement membrane, commonly referred to as molecular mimicry, leading to the generation of cross-reacting antibodies and the formation of complexes in the glomeruli.

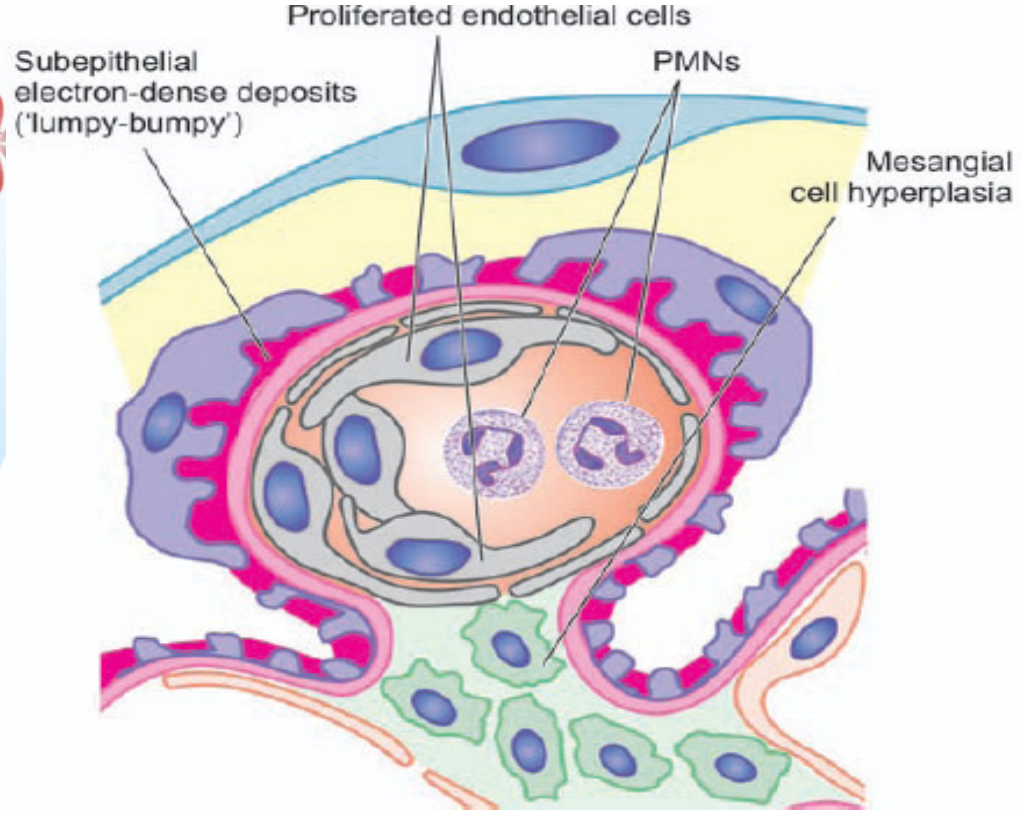
Pathophysiology

- Similarly, the exact GAS antigen(s) leading to immune complex formation also remains somewhat elusive.
- Two of the leading candidate antigens are nephritis-associated plasmin receptor and streptococcal pyrogenic exotoxin B.
- The presence of immune complexes leads to complement deposition, leukocyte infiltration, and proliferation of the structural mesangial cells of the glomerulus.

Mechanism of disease



Mechanism of disease



Presenting symptoms

- The most common presenting symptoms are the classic ***triad*** of glomerulonephritis:
- Gross hematuria:Hematuria is seen in virtually all patients with PSGN, but only one-third of them may note gross hematuria.
- Edema,
- Hypertension

Different antigen titer todetect GAS infection

- ASO
- Anti DNAse B,
- Anti Streptozyme O,
- Streptokinase,
- Anti hyaluronidase
  - But they also have high (25%–50%) false-negative rates.
- The test of greatest diagnostic value in the diagnosis of PSGN, as well as in most other postinfectious glomerulonephritides, is serum C3.

Slide Title

Hypocomplementemia (C3) with low C4 levels

- Chronic bacteremia (endocarditis, shunt nephritis
- MPGN type 1 (70% of cases)
- SLE nephritis

Hypocomplementemia (C3) with normal C4 levels

- MPGN types 2 and 3 (60%)
- Other postinfectious glomerulonephritis
- PSGN