

# Nephritic syndrome (Glomerulonephritis)

---

<https://hdl.handle.net/2144/48643>

*"Downloaded from OpenBU. Boston University's institutional repository."*

# GLOMERULAR FILTRATION DISORDERS

## Nephritic Syndrome (GN):

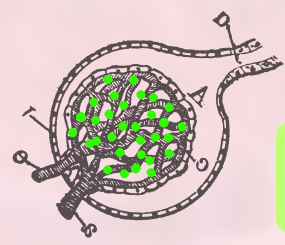
**Sub-endothelial deposits** are observed in microscopy.  
(Except PIGN)

Group of conditions characterized by:

**Hypertension**  
**Hematuria**  
(dysmorphic RBC and RBC Casts)  
**Decrease in GFR (AKI)**  
**Proteinuria**  
**Oliguria/anuria**  
**Crescents in Bowman's Capsule**

### Granular IM

Low Plasma  
Complement



#### Lupus (SLE) Nephritis:

Usually presents with systemic SLE symptoms such as lacy reticular rash.

Serology: **+ ANA, +anti dsDNA**

**6 classes:** I:Minimal Mesangial, II:Mesangial, III:Focal Proliferative, IV:Diffuse Proliferative, V:Membranous (nephrotic), VI:Sclerotic

**Tx (Class III-V):** Corticosteroids, Immunosuppressants, antihypertensives, diuretics, ACEi/ARB, SGLTi

#### PIGN:

Presents with acute nephritic syndrome approximately **3 weeks after pharyngitis or impetigo**.

Sub-epithelial humps, and numerous neutrophils within capillary tufts.

Serology: **+ Antistreptolysin O, + anti dsDNase B**

**Tx:** Supportive Care +/- glucocorticoids

#### Cryoglobulinemia:

Presents with **inflammatory arthritis, purpura, skin ulcers, peripheral neuropathy**.

Commonly associated with HCV, monoclonal gammopathy, connective tissue disease

Serology: **+ Cryoglobulins**, can be **+HCV, +SPEP (M Spike), +ANA**

**Tx:** Treat underlying cause, glucocorticoids, rituximab

Normal Plasma  
Complement

#### IgA Nephropathy (IgAN)

It is one of the most common forms of GN worldwide (mainly Asia).

IgA and C3 deposits in the mesangium causing episodic hematuria.

**Occurs during or soon after upper respiratory track infections such as pharyngitis.**

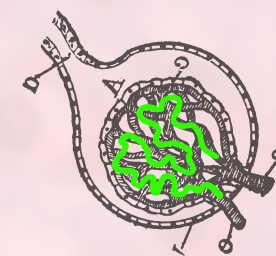
Serology: **IgA:C3 > 3**

**Tx:** Acei/ARB, SGLTi

+ Glucocorticoids (if GFR is declining rapidly),

+ Cyclophosphamide (if crescents are present)

### Linear IM



#### Goodpasture's Disease

Occur due to circulating **IgG antibody against alpha-3 chain of type IV collagen** found throughout the GBM and alveoli. If untreated, can cause RPGN and respiratory failure from pulmonary hemorrhage.

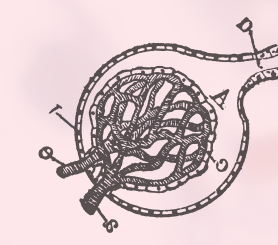
Serology: **+ anti GMB Ab**

**Tx:** High Dose Glucocorticoids, Cyclophosphamide, plasma exchange therapy (to get rid of anti GMB Ab)

#### Anti GMB Disease

Anti GBM disease when the presentation is limited to kidneys

### Pauci Immune



#### ANCA Associated GN

Antibodies that attach neutrophils and cause their activation are referred as **C-ANCA (cytoplasmic) P-ANCA (perinuclear)**.

ANCA associated GN refers to a group of systemic small vessel vasculitis with necrotizing granulomas:

#### GPA

Associated with **sinusitis, epistaxis, otitis media, polychondritis, uveitis**

**Pulmonary hemorrhage**

**RPGN**

**Palpable Purpura**

Serology: **+ C-ANCA/ anti PR3+**

#### EPA

Associated with **asthma, Eosinophilia**

**Pulmonary hemorrhage**

**RPGN**

**Palpable Purpura**

Serology: **+ P-ANCA/ anti MPO+**

#### MPA

Associated with **Pulmonary hemorrhage**

**RPGN**

**Palpable Purpura**

Serology: **+ P-ANCA/ anti MPO+**

**Tx:** High Dose Glucocorticoids, Rituximab, Cyclophosphamide (if crescents are present)