



Nephrotic vs Nephritic

Glomerular disease · Protein or blood? That single question splits the differential

RPGN IS AN EMERGENCY
days matter

TELL THEM APART *the urine sediment does most of the work*

NEPHROTIC — a leaky filter

Proteinuria > 3.5 g/day · hypoalbuminemia · edema (periorbital, dependent) · hyperlipidemia. Bland sediment: **few cells, no casts**. Blood pressure often normal. Causes: minimal change, FSGS, membranous, diabetic nephropathy, amyloid.

NEPHRITIC — an inflamed glomerulus

Hematuria with **dysmorphic red cells and RBC casts** · hypertension · oliguria and rising creatinine · proteinuria usually **sub-nephrotic**. Causes: IgA nephropathy, post-infectious GN, lupus nephritis, ANCA vasculitis, anti-GBM, cryoglobulinemia.

THE OVERLAP IS REAL

Lupus nephritis, membranoproliferative GN, and advanced diabetic disease can produce **both** heavy proteinuria and an active sediment. **Do not force the patient into one box** — instead ask "is there active inflammation that needs immunosuppression, and how fast is the creatinine moving?"

WORK IT UP *send these before the biopsy, not after*

Test	What you are looking for
Urine microscopy	Look at it yourself, fresh. Dysmorphic RBCs and RBC casts confirm glomerular bleeding; fatty casts suggest nephrotic disease. This is the single highest-yield test.
Quantify protein	UPCR or UACR , or a 24-hour collection. Establishes nephrotic range and gives you a number to follow on treatment.
Complement C3 / C4	Low in post-infectious GN, lupus, MPGN, and cryoglobulinemia. Normal in IgA nephropathy, ANCA vasculitis, and anti-GBM — a useful early fork.
Serologies	ANA and anti-dsDNA (lupus) · ANCA (MPO/PR3) · anti-GBM · hepatitis B and C, HIV · ASO or anti-DNase B · cryoglobulins.
Paraprotein screen	SPEP with free light chains in adults, especially over 50 — myeloma and amyloid present as glomerular disease.
Kidney biopsy	Usually needed in adults to establish the diagnosis and guide therapy. Particularly valuable where lupus or another systemic disease is suspected , since it changes both management and prognosis. Check platelets, coagulation, and blood pressure first.

MANAGE THE NEPHROTIC PATIENT *supportive care is most of the benefit*

- Sodium and fluid restriction plus a loop diuretic** for edema. Often needs higher doses than expected, because albumin-bound drug delivery is impaired and gut absorption is unreliable when the bowel is edematous.
- ACE inhibitor or ARB** to reduce proteinuria and protect the kidney — the cornerstone of non-immunological therapy.
- Statin** for the hyperlipidemia, which is a consequence of the disease rather than diet.
- Disease-specific immunosuppression** only once the histology is known — steroids for minimal change, rituximab or other agents for membranous, and lesion-directed regimens for lupus nephritis.
- Routine IV albumin and prophylactic antibiotics are not recommended.** Albumin gives transient benefit at best outside specific refractory edema.

THE TWO COMPLICATIONS THAT CATCH PEOPLE OUT *thrombosis and rapid progression*

THROMBOSIS — including renal vein

Loss of antithrombotic proteins creates a hypercoagulable state. Consider **prophylactic anticoagulation when albumin is < 2.0–2.5 g/dL AND additional risk factors** exist — proteinuria > 10 g/day, **membranous nephropathy**, BMI > 35, heart failure, immobility, recent surgery. **Do not decide on albumin alone. Avoid DOACs** here — drug levels are unpredictable with heavy proteinuria and low albumin. Suspect **renal vein thrombosis** with flank pain, hematuria, and a sudden creatinine rise.

RPGN — A NEPHROLOGICAL EMERGENCY

Creatinine rising over days to weeks with an active sediment. Crescents on biopsy. **Refer the same day** — irreversible fibrosis develops quickly. Treatment is **pulse corticosteroids plus cyclophosphamide or rituximab**, with **plasma exchange for anti-GBM disease** and selected severe ANCA presentations. Delay costs nephrons permanently.

THE NAMED DISEASES *the pattern that should make you think of each*

Disease	The giveaway
Minimal change	Children and young adults, abrupt florid nephrotic syndrome , normal light microscopy. Highly steroid-responsive .
FSGS	Nephrotic with hypertension and reduced eGFR . Secondary forms with obesity, HIV, heroin, sickle cell, or reduced nephron mass.
Membranous	Adults, nephrotic, anti-PLA2R antibodies . Highest thrombotic risk of the nephrotic diseases. Screen for malignancy, hepatitis B, lupus, and NSAIDs.
IgA nephropathy	Hematuria within days of an upper respiratory infection , normal complement. Commonest primary glomerulonephritis worldwide.
Post-infectious GN	2–4 weeks after streptococcal throat or skin infection, low C3 , usually self-limiting in children.
Lupus nephritis	Young woman, systemic features, low C3 and C4 , positive ANA and anti-dsDNA. Biopsy class drives the immunosuppression .
ANCA vasculitis	Normal complement , MPO or PR3 positive, often with pulmonary or ENT involvement. A classic cause of RPGN.
Anti-GBM	Pulmonary–renal syndrome with hemoptysis. Plasma exchange plus immunosuppression, urgently .

PEARLS & PITFALLS

- Look at the urine microscopy yourself.** RBC casts change the diagnosis, the urgency, and the referral, and dipstick alone will not show them.
- A rapidly rising creatinine with an active sediment is RPGN until proven otherwise.** Do not schedule that biopsy for next week.
- Complement levels split the differential early** — low in lupus, post-infectious, and MPGN; normal in IgA, ANCA, and anti-GBM.
- Do not use DOACs for nephrotic-range thrombosis prophylaxis or treatment** — levels are unpredictable.
- Screen adults for a paraprotein.** Amyloid and myeloma masquerade as primary glomerular disease.
- Diuretic resistance is expected** in nephrotic edema — escalate the dose or switch to IV rather than concluding it does not work.

