REBELLIOUS MEDIC · NEPHROLOGY ALGORITHM SERIES

Management of Glomerular Diseases

General principles plus disease-specific first-line therapy for MN, childhood NS, MCD, FSGS, infection-related GN, MPGN-pattern disease, and anti-GBM disease.

2021 KDIGO Clinical Practice Guideline
Management of Glomerular Diseases
KDIGO GN Work Group · Kidney Int 2021;100(4S):S1–S276

GRADE — 1 · We Recommend | 2 · We Suggest | NG · Not Graded / Practice Point

1 General Principles

- NG — **Biopsy** is the gold standard for diagnosis; may be deferred in select scenarios (e.g., nephrotic + positive anti-PLA2R for MN). Repeat if it would change therapy/prognosis.
- NG — **Proteinuria:** 24-h urine PCR preferred in adults; first-morning PCR in children (goal <200 mg/g or <8 mg/m²/h) — spot PCR not ideal.
- NG — **eGFR equation:** CKD-EPI creatinine (adults); modified Schwartz (children); FAS equation usable in both.
- NG — **ACEi or ARB** first-line for proteinuria reduction and BP control in glomerular disease.
- NG — **Anticoagulation:** full-dose for VTE events in nephrotic syndrome; prophylactic dosing when thrombosis risk exceeds bleeding risk — MN carries the highest VTE risk of NS causes.
- NG — **Infection prevention:** pneumococcal/influenza/zoster vaccination; screen TB/HBV/HCV/HIV/syphilis before immunosuppression; consider TMP-SMX prophylaxis on high-dose steroids/rituximab/cyclophosphamide.

2 Membranous Nephropathy (MN)

- NG — **No immunosuppression** if proteinuria <3.5 g/d + albumin >30 g/L + eGFR >60; OR nephrotic with normal eGFR and no progression risk factors/complications.
- 1B — **≥1 risk factor:** rituximab or cyclophosphamide + alternate-month glucocorticoids ×6mo, OR CNI-based therapy ≥6mo, per risk estimate.
- NG — **Monitoring:** anti-PLA2R antibody levels at 6mo (some centers at 3mo) to assess response and guide adjustments.

3 Nephrotic Syndrome in Children

- NG — **Initial episode:** oral glucocorticoids ×8wk (4wk daily, then tapering).
- NG — **Frequent relapse/steroid-dependent:** daily low-dose steroid or a steroid-sparing agent.
- NG — **Serious steroid toxicity:** CNI, mycophenolate mofetil, levamisole, or cyclophosphamide.
- NG — **Steroid-resistant:** cyclosporine or tacrolimus as initial second-line therapy.

4 Minimal Change Disease — Adults

- 1C — **Initial treatment:** high-dose oral glucocorticoids.
- NG — **Relapsing/dependent/resistant:** cyclophosphamide, rituximab, CNIs, or a mycophenolic acid analog.

5 FSGS — Adults (Primary)

- NG — **First-line:** high-dose oral glucocorticoids for primary FSGS with nephrotic syndrome.
- NG — **Steroid-resistant:** cyclosporine or tacrolimus.

6 Infection-Related GN

- NG — **Bacterial:** biopsy if diagnosis unclear/culture-negative; treat underlying infection + supportive care.
- 1C — **HBV** (DNA >2000 IU/mL): nucleos(t)ide analogues per standard HBV guidelines; avoid pegylated interferon and cyclophosphamide/rituximab until virologic remission.
- 1C — **HIV/HIVAN:** initiate ART in all patients with HIV and CKD regardless of CD4 count; glucocorticoids case-by-case adjunct.
- NG — **HCV:** per KDIGO 2018 HCV-in-CKD guideline (DAA-based therapy).
- NG — **Schistosomiasis/filariasis/malaria:** antiparasitic therapy to eradicate organism — no indication for immunosuppression.

7 Ig-/Complement-Mediated GN (MPGN Pattern)

- NG — **Idiopathic, non-nephrotic:** proteinuria <3.5 g/d, no NS, normal eGFR — supportive care with RAS inhibition alone.
- NG — **Idiopathic, nephrotic:** normal/near-normal SCr — limited course of glucocorticoids.
- NG — **Abnormal function, active sediment:** add glucocorticoids + immunosuppressive therapy to supportive care (non-crescentic).
- NG — **Crescentic/RPGN:** high-dose glucocorticoids + cyclophosphamide.
- NG — **eGFR <30:** supportive care alone for most patients.
- NG — **C3 glomerulopathy:** no monoclonal gammopathy + moderate–severe disease — MMF + glucocorticoids first; eculizumab if this fails.

8 Anti-GBM Disease

- NG — **Diagnosis** without delay in suspected RPGN; start treatment before confirmation if strongly suspected.
- 1C — **Induction:** cyclophosphamide + glucocorticoids + plasmapheresis in all patients, except dialysis-dependent at presentation with 100% crescents/>50% global sclerosis AND no pulmonary hemorrhage.
- NG — **Regimen detail:** plasma exchange until anti-GBM titers undetectable; cyclophosphamide ×2–3mo; glucocorticoids ×~6mo.
- NG — **Maintenance:** none needed if anti-GBM alone; if anti-GBM + ANCA positive, treat as AAV maintenance. Refractory disease: consider rituximab.
- NG — **Transplant:** delay until anti-GBM antibodies undetectable for ≥6 months.

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