ANCA-Associated Vasculitis

Diagnosis and biopsy strategy, prognosis and relapse definitions, induction and maintenance therapy, dosing, refractory disease, and transplantation.

2024 KDIGO Clinical Practice Guideline
Management of ANCA-Associated Vasculitis
KDIGO Glomerular Diseases Work Group · Kidney Int 2024;105(3S):S71–S116

FORMAT *Condensed from recommendations + practice points, Chapter 9 (KDIGO 2021 Glomerular Diseases Guideline update).*

1 Diagnosis & Biopsy Strategy

–	GUIDANCE
ANCA-positive, rapidly progressive	Do not delay immunosuppression awaiting biopsy at experienced centers — biopsy soon after starting when feasible
ANCA-negative or atypical	Biopsy if no contraindication before treating; consider mimics — SLE, infection, malignancy
Anti-GBM positive	Urgent plasma exchange without waiting for biopsy; add plasma exchange for ANCA + anti-GBM overlap
Center	Treat at centers experienced in AAV — rituximab, plasma exchange, ICU and acute hemodialysis access

2 Prognosis, Definitions & Relapse Risk

–	GUIDANCE
Remission	BVAS = 0; for GN, stable or improved GFR — persistent hematuria/proteinuria alone doesn't imply activity
Relapse	Increased disease activity after partial/complete remission; major = life/organ-threatening (alveolar hemorrhage, subglottic stenosis, vision-threatening)
ANCA titer	Persistence, rising level, or seroconversion may predict relapse — factor into treatment decisions
Relapse risk factors	GPA diagnosis, PR3-ANCA, lower SCr, extensive disease, ENT involvement, prior relapse, ANCA-positive at end of induction, lower cyclophosphamide exposure, early immunosuppression/steroid withdrawal

3 Induction Therapy

–	GUIDANCE
Regimen	Glucocorticoids + rituximab or cyclophosphamide for new-onset AAV (1B); pair with steroid taper or avacopan; consider plasma exchange per indications
Severe GN	SCr >4 mg/dl: limited rituximab-alone data — cyclophosphamide, or rituximab + cyclophosphamide combination, can be considered
Dialysis-dependent	Consider discontinuing immunosuppression after 3mo if remaining on dialysis with no extrarenal disease

4 Choosing Induction Agent & Route

–	GUIDANCE
Rituximab preferred	Children/adolescents, fertility concerns, frail older adults, steroid-sparing priority, relapsing disease, PR3-ANCA
Cyclophosphamide preferred	Severe GN (SCr >4 mg/dl) — can combine 2 IV pulses with rituximab
IV cyclophosphamide	Moderate prior cumulative dose, lower WBC, ready infusion access, adherence concerns
Oral cyclophosphamide	Cost-sensitive, no infusion access, self-administration preferred

5 Induction Dosing

–	GUIDANCE
Cyclophosphamide	Oral: 2 mg/kg/d ×3mo (max 6mo). IV: 15 mg/kg wks 0,2,4,7,10,13 (±16,19,21,24). Reduce for age ≥60/70y and GFR <30
Rituximab	375 mg/m² weekly ×4wk, OR 1g at weeks 0 and 2
Avacopan	30mg twice daily as glucocorticoid-sparing alternative — greatest benefit with high steroid-toxicity risk or lower GFR
Steroid taper	PEXIVAS reduced-dose regimen by weight, from 50–75mg wk1 down to 5mg by wk15–16, then local practice
Plasma exchange	Consider if SCr >3.4 mg/dl, dialysis-dependent, rapidly rising SCr, or diffuse alveolar hemorrhage with hypoxemia

6 Maintenance Therapy

–	GUIDANCE
Regimen	Rituximab, or azathioprine + low-dose glucocorticoids, after remission induction (1C); duration 18mo–4y
Rituximab dosing	MAINRITSAN (500mg ×2 at remission, then mo 6/12/18) or RITAZAREM (1g after induction, then mo 4/8/12/16)
Azathioprine dosing	1.5–2 mg/kg/d until 1y post-diagnosis, taper 25mg/3mo to 4y; glucocorticoids 5–7.5mg/d ×2y then taper 1mg/2mo
Alternatives	MMF or methotrexate if azathioprine-intolerant (avoid methotrexate if GFR <60)
Rituximab vs. azathioprine	Rituximab: relapsing disease, PR3-ANCA, frail elderly, azathioprine allergy. Azathioprine: low baseline IgG (<300mg/dl), limited rituximab availability

7 Relapsing & Refractory Disease

–	GUIDANCE
Relapse	Reinduce as for new-onset disease, preferably with rituximab
Refractory	Increase glucocorticoids (IV/oral); switch/add rituximab ↔ cyclophosphamide from the agent used initially; consider plasma exchange
Alveolar hemorrhage	With hypoxemia: consider plasma exchange plus glucocorticoids with cyclophosphamide or rituximab

8 Transplantation

–	GUIDANCE
Timing	Delay transplantation until complete clinical remission for ≥6 months
ANCA status	Persistence of ANCA positivity alone should not delay transplantation

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