NMOSD & MOGAD — TREATMENT OPTIONS

Treatment options for **AQP4-IgG NMOSD** and **MOGAD** in one view. The **Disease & approval** column shows what each agent is FDA-approved or used for — note all 4 FDA-approved drugs are **AQP4-NMOSD only**; MOGAD is treated **off-label** (no FDA-approved MOGAD therapy exists as of 2026). Verify dosing/screening against current prescribing information.

Drug	Disease & approval	Mechanism	Dose / route	Key side effects	Clinical tips
FDA-approved maintenance — adult AQP4-IgG NMOSD					
Eculizumab (Soliris)	**NMOSD (AQP4+)** — FDA 2019	Terminal complement **C5** inhibitor	900 mg IV weekly ×4, then 1200 mg q2 wk	Meningococcal infection (boxed warning), infusion reactions, headache, URTI	Meningococcal vaccine ≥2 wk before (or antibiotic prophylaxis); no role in AQP4-negative or MOGAD
Ravulizumab (Ultomiris)	**NMOSD (AQP4+)** — FDA 2024	Long-acting **C5** inhibitor	Weight-based IV load, then q8 wk	Meningococcal infection (boxed warning), infections, headache	Much longer dosing interval than eculizumab; meningococcal vaccination required
Inebilizumab (Uplizna)	**NMOSD (AQP4+)** — FDA 2020	Anti-**CD19** B-cell depletion	300 mg IV day 1 & 15, then q6 mo	Infusion reactions, infections, hypogammaglobulinemia, lymphopenia, HBV reactivation	Screen HBV/TB, quantitative Ig, vaccines; broader B-cell depletion than anti-CD20
Satralizumab (Enspryng)	**NMOSD (AQP4+)** — FDA 2020	**IL-6 receptor** antagonist	120 mg SC wk 0/2/4, then q4 wk	Infections, injection reactions, ↑ LFTs, ↓ neutrophils	SC self-injection; monitor LFTs/neutrophils; IL-6 blockade can blunt CRP/fever (mask infection)
Off-label maintenance — NMOSD ± MOGAD					
Rituximab	**NMOSD** off-label (1st-line) · **MOGAD** off-label (less reliable)	Anti-**CD20** B-cell depletion	1 g IV ×2 (2 wk apart) or 375 mg/m²; redose q6 mo or by B-cell return	Infusion reactions, infections, hypogammaglobulinemia, HBV reactivation, rare PML	Time redosing by CD19/CD27 memory B-cell reconstitution; HBV screen; widely used in both diseases
Tocilizumab	**Both** (off-label; refractory)	**IL-6 receptor** antagonist (IV/SC)	8 mg/kg IV q4 wk	Infections, ↑ LFTs, ↓ neutrophils/platelets, GI perforation, ↑ lipids	For disease refractory to B-cell depletion; monitor LFTs/CBC/lipids
Azathioprine	**Both** (off-label; maintenance)	Purine antimetabolite	2–3 mg/kg/day PO	Myelosuppression, hepatotoxicity, ↑ malignancy, GI	Check **TPMT / NUDT15** + CBC/LFT; slow onset (~3–6 mo) → bridge with steroids
Mycophenolate mofetil	**Both** (off-label; maintenance)	Inhibits IMPDH (purine synthesis)	1–1.5 g PO BID	GI upset, leukopenia, infection, teratogenic	Bridge with steroids at start; contraception required; monitor CBC
IVIG	**MOGAD** maintenance (off-label, esp. pediatric); acute rescue	Immunomodulation (multiple)	1–2 g/kg q4 wk (maintenance varies)	Headache, aseptic meningitis, thrombosis, renal, anaphylaxis (IgA deficiency)	Preferred maintenance in MOGAD, esp. children; acute use mainly MOGAD rescue (not standard acute NMOSD); check IgA
Acute attack — both diseases					
IV methylprednisolone	**Both** (acute, 1st-line)	High-dose corticosteroid	1 g IV daily ×3–5 days	Hyperglycemia, insomnia, mood change, infection	First-line for acute attacks; often followed by an oral taper (esp. MOGAD, which is steroid-dependent)
Plasma exchange (PLEX)	**Both** (acute; steroid-refractory)	Removes circulating autoantibodies	5–7 exchanges every other day	Line complications, hypocalcemia, coagulopathy, hypotension	**Early** PLEX improves recovery in severe NMOSD attacks — consider first-line for severe/refractory attacks

⚠ **Avoid MS disease-modifying therapies in AQP4-NMOSD** — interferon-β, natalizumab, fingolimod / S1P modulators, and alemtuzumab can **worsen** AQP4-NMOSD; glatiramer is ineffective. Confirm AQP4/MOG serostatus before any "MS" DMT. MS DMTs are also generally ineffective in MOGAD. **When to start maintenance:** AQP4+ NMOSD — after the first attack; MOGAD — usually after a relapse or severe residual deficit (many monophasic cases need none).