

Trigeminal Neuralgia

Diagnostic evaluation, first-line and refractory pharmacotherapy, surgical outcomes, and clinical decision-making for trigeminal neuralgia.

2008 AAN/EFNS Evidence-Based Practice Parameter
Diagnostic Evaluation and Treatment of Trigeminal Neuralgia
AAN Quality Standards Subcommittee & EFNS · Neurology
2008;71:1183-1190

LEVEL

A · Established

B · Probable

C · Possible

U · Insufficient Evidence

1 Diagnostic Imaging

- C

Head imaging identifies a structural cause in up to 15% of TN patients; may be considered useful.
- U

MRI for compression: insufficient evidence to support or refute usefulness for identifying neurovascular compression.

2 Risk Features for Symptomatic TN

- B

STN risk features: sensory deficits, bilateral involvement, and abnormal trigeminal reflexes suggest symptomatic TN; absence does not exclude it.
- B

Reflex testing: measure trigeminal reflexes in a qualified lab to help distinguish symptomatic from classic TN.
- B

Not useful for STN: younger onset age, V1 involvement, treatment unresponsiveness, and abnormal evoked potentials should be disregarded.

3 First- & Second-Line Drugs

AGENT	EVIDENCE	LEVEL
Carbamazepine	Established effective; offer first-line, 200-1200 mg/day	A
Oxcarbazepine	Probably effective; should be considered, 600-1800 mg/day; may pose fewer safety concerns than CBZ	B
Second-line	Baclofen, lamotrigine, and pimozide are possibly effective and may be considered	C

4 Drugs to Avoid or Unproven

- B neg

Avoid: topical ophthalmic anesthesia is probably ineffective; should not be considered.
- U

Insufficient evidence: clonazepam, gabapentin, phenytoin, tizanidine, topical capsaicin, and valproate.

5 Refractory Therapy — General

- C

Surgical referral: early surgical therapy may be considered for TN refractory to medical therapy.
- C

Surgical options: percutaneous Gasserian ganglion procedures, gamma knife, and microvascular decompression may be considered.
- Peripheral techniques: evidence is negative (streptomycin/lidocaine) or insufficient for other peripheral nerve procedures — not recommended.
- U

MS-associated TN: insufficient evidence to support/refute surgical management; tends toward lesser efficacy than classic TN.

6 Surgical Outcomes — Percutaneous & Gamma Knife

PROCEDURE	OUTCOMES / COMPLICATIONS
Percutaneous Gasserian	~90% initial pain relief; 68-85% pain-free at 1y, 54-64% at 3y, ~50% at 5y; sensory loss ~50%, dysesthesia <6%, anesthesia dolorosa ~4%
Gamma knife	Complete pain relief without medication in up to 69% at 1y, 52% at 3y; sensory complications ~6%; facial numbness 9-37% (improves with time); 88% satisfied

7 Surgical Outcomes — Microvascular Decompression

-	OUTCOMES / COMPLICATIONS
Efficacy	90% obtain pain relief; >80% pain-free at 1y, 75% at 3y, 73% at 5y — longest duration among surgical options (indirect comparison only)
Complications	Mortality ~0.2% (up to 0.5%); aseptic meningitis ~11% (most common); sensory loss 7%; hearing loss up to 10% (major long-term complication); diplopia usually transient

8 Clinical Context & Approach

- Workup sequence: assess for sensory deficits/bilateral involvement first; if suspicion persists, obtain reflex testing or head imaging; MRI reasonably foregone if reflexes are normal.
- Choosing first-line: CBZ has stronger evidence; OXC may have fewer safety concerns — either is a reasonable first choice.
- If refractory: consider add-on lamotrigine or switch to baclofen; effect of other neuropathic-pain drugs is unknown; no trials compare poly- vs monotherapy.