



# NEW THERAPEUTIC APPROACHES FOR TRIGEMINAL NEURALGIA

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## OBJECTIVE

To evaluate the efficacy and safety of recent therapeutic strategies for trigeminal neuralgia (TN), including pharmacological treatments, non-pharmacological interventions and neurosurgical procedures.

## METHODS

A systematic review of articles from 2020 to 2024 was carried out on the PubMED and Bvsalud platforms, using the descriptors "Trigeminal Neuralgia" and "Treatment". With filters for clinical trial, meta-analysis and randomized controlled trial. A total of 482 articles were found, of which 11 were selected for their thematic and methodological relevance.

## RESULTS

TN is characterized by severe facial pain, significantly impacting patients' quality of life, and different therapeutic strategies have been evaluated to optimize pain control. Carbamazepine (CBZ) was effective in reducing the intensity and frequency of pain in TN, although it can be associated with dizziness and drowsiness. On the other hand, erenumab did not show better results than placebo. Among the non-pharmacological interventions, electroacupuncture, alone or combined with low doses of CBZ, provided significant and sustained pain relief for at least 28 weeks, as well as improving quality of life. Peripheral pulsed radiofrequency (PRF), applied via the round and oval foramen, showed a faster clinical response and fewer complications, while the approach via the semilunar ganglion showed a lower rate.

PRF of the Gasser ganglion combined with dexamethasone and bupivacaine showed greater efficacy in post-herpetic neuralgia, with rapid pain relief and less use of pregabalin and analgesics. Microvascular decompression proved to be safe and effective in the elderly, with good long-term outcomes. In balloon compression, the use of remimazolam was associated with a lower incidence of trigeminocardial reflex, with no increase in adverse effects. Finally, thalamotomy with Gamma Knife radiosurgery proved effective in refractory cases, with a low incidence of side effects.

## CONCLUSION

Although carbamazepine remains the standard treatment, new approaches, such as electroacupuncture and pulsed radiofrequency, have shown good efficacy with a lower incidence of adverse effects. Neurosurgical alternatives, such as microvascular decompression and Gamma Knife, expand the options for refractory cases, reinforcing the importance of individualized approaches to pain control and improving quality of life.

## REFERENCES

