

## Original Research

### Carbamazepine and combination of carbamazepine with baclofen in the management of trigeminal neuralgia

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#### ABSTRACT:

**Background:** Trigeminal neuralgia (TN) is the most common among the neuralgias. The present study compared carbamazepine and combination of carbamazepine with baclofen in the management of trigeminal neuralgia. **Materials & Methods:** 50 patients of trigeminal neuralgia of both genders were divided into 2 groups. Group I patients received 600–800 mg/day carbamazepine twice daily and group II received 600 mg/day carbamazepine plus baclofen 10–20 mg/day twice daily. Patients were recalled after 7 days, 15 days and 30 days. **Results:** Group I had 12 males and 13 females and group II had 11 males and 14 females. The mean pain (VAS) at baseline was 9.2 in group I and 9.0 in group II, at 7 days was 6.7 in group I and 5.2 in group II, at 15 days was 5.6 in group I and 3.1 in group II and at 1 month was 4.5 in group I and 1.6 in group II. The difference was significant ( $P < 0.05$ ). **Conclusion:** Carbamazepine in combination with baclofen is more effective as compared to Carbamazepine alone in reducing pain in patients with trigeminal neuralgia.

**Key words:** Trigeminal neuralgia, Carbamazepine, baclofen

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#### INTRODUCTION

Trigeminal neuralgia (TN) is the most common among the neuralgias. It is also called as Tri facial neuralgia, Fothergill's disease, Tic-douloureux.<sup>1</sup> The etiology of tic douloureux is not known and, though it may occur at any age, it is usually seen in patients over the age of 50 years.<sup>2</sup> TN is characterized by paroxysms of severe, lancinating and electric like bouts of recurrent, unilateral facial pain restricted to the distribution of the trigeminal nerve lasting only for a few seconds.<sup>3</sup> This pain rarely occurs during sleep and the patient maybe totally asymptomatic during the episodes.<sup>4</sup>

As TN manifests with the severest possible pain, the proper management of the patients become a responsibility for the oral physician. According to 2008 guidelines of the American Academy of Neurology-European Federation of Neurological Societies, medical therapy must be started immediately after the TN is being diagnosed and surgical options are to be considered whenever there is failure to respond to the medicinal therapy.<sup>5</sup> Various medicinal therapeutic agents have been known to be

effective in controlling the symptoms in TN where carbamazepine and oxcarbazepine are recognized as the first-line therapy.<sup>6</sup> The other pharmacotherapeutic agents used in the management of TN include baclofen, lamotrigine, gabapentin, pregabalin, topiramate, phenytoin, levetiracetam, and botulinum toxin-A and capsaicin.<sup>7</sup> The present study compared carbamazepine and combination of carbamazepine with baclofen in the management of trigeminal neuralgia.

#### MATERIALS & METHODS

The present study comprised of 50 patients of trigeminal neuralgia of both genders. All gave their written consent for the participation in the study. Data such as name, age, gender etc. was recorded. Patients were divided into 2 groups. Group I patients received 600–800 mg/day carbamazepine twice daily and group II received 600 mg/day carbamazepine plus baclofen 10–20 mg/day twice daily. Patients were recalled after 7 days, 15 days and 30 days. Data thus obtained were subjected to statistical analysis.  $P$  value  $< 0.05$  was considered significant.

**RESULTS**

**Table I: Distribution of patients**

Groups	Group I	Group II
Drug	carbamazepine	carbamazepine + baclofen
M:F	12:13	11:14

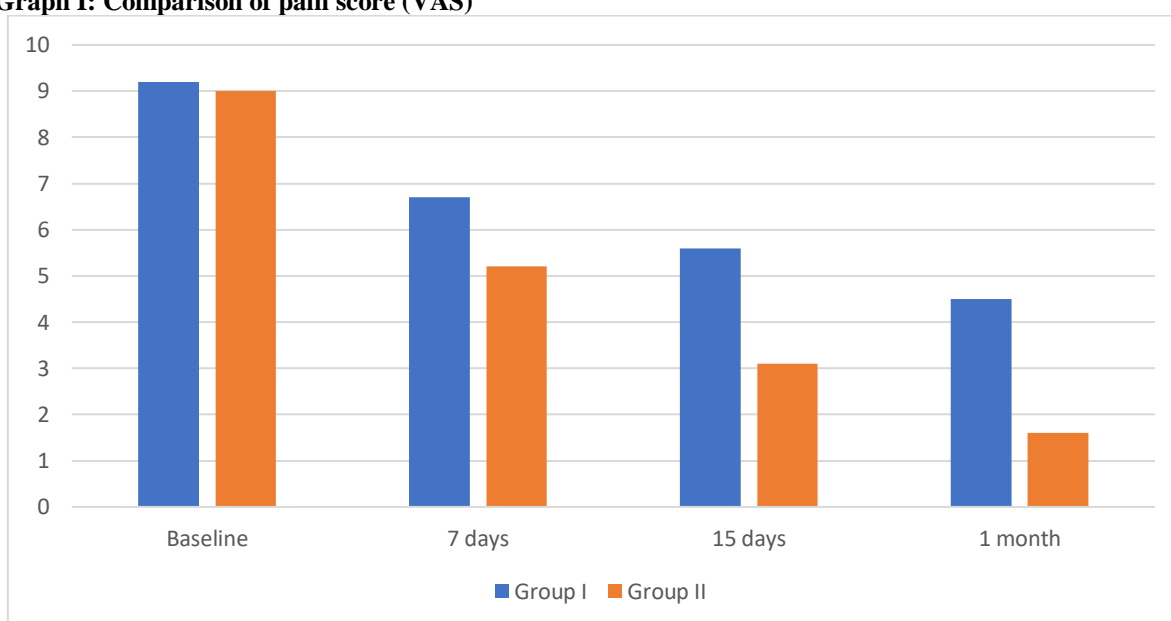
Table I shows that group I had 12 males and 13 females and group II had 11 males and 14 females.

**Table II Comparison of pain score (VAS)**

Time	Group I	Group II	P value
Baseline	9.2	9.0	0.94
7 days	6.7	5.2	0.02
15 days	5.6	3.1	0.04
1 month	4.5	1.6	0.05

Table II, graph I shows that mean pain (VAS) at baseline was 9.2 in group I and 9.0 in group II, at 7 days was 6.7 in group I and 5.2 in group II, at 15 days was 5.6 in group I and 3.1 in group II and at 1 month was 4.5 in group I and 1.6 in group II. The difference was significant ( $P < 0.05$ ).

**Graph I: Comparison of pain score (VAS)**



**DISCUSSION**

Trigeminal neuralgia is often described as “the most terrible pain known to man.”<sup>8</sup> It may involve one or more branches of the 5th cranial nerve, the maxillary branch is more commonly involved, and the least involved is the ophthalmic branch, and when comparing right with left, the right side of the face was affected more commonly which could be explained that it could be due to the narrower foramina (rotundum and ovale) on the right side.<sup>9</sup> According to International Headache Society (IHS) it is a painful unilateral affliction of the face, characterized by brief electric shock like pain limited to the distribution of one or more divisions of the trigeminal nerve.<sup>10</sup> Pain is commonly evoked by trivial stimuli such as washing, shaving, smoking, talking, and brushing the teeth, but may also occur spontaneously. The pain is abrupt in onset and termination, and may remit for varying periods.<sup>11,12</sup> The present study compared carbamazepine and combination of carbamazepine

with baclofen in the management of trigeminal neuralgia.

We found that group I had 12 males and 13 females and group II had 11 males and 14 females. Haanpaa et al<sup>13</sup> found that the capsaicin 8% patch provided non-inferior pain relief to an optimized dose of pregabalin in neuropathic pain, with a faster onset of action, fewer systemic side effects, and greater treatment satisfaction. Medical management of TN is mainly with anticonvulsants and skeletal muscle relaxants. Carbamazepine (Tegretol) is the initial choice for the treatment of TN. Dosages used have ranged from 100 to 1,200 mg per day, with most patients responding to 200 to 800 mg per day in two or three divided doses. Serious side effects have been reported with anticonvulsant drugs, including deaths from hematological reactions. The commonest adverse effects are impaired mental and motor function, which may limit clinical use, particularly in elderly people. Baclofen, a skeletal muscle relaxant has also been shown to be effective.

We found that mean pain (VAS) at baseline was 9.2 in group I and 9.0 in group II, at 7 days was 6.7 in group I and 5.2 in group II, at 15 days was 5.6 in group I and 3.1 in group II and at 1 month was 4.5 in group I and 1.6 in group II. Parekh et al<sup>14</sup> reported a putative synergistic effect when baclofen is combined with 500 mg/day carbamazepine. Thus, in cases nonresponsive to carbamazepine alone baclofen can be combined for better management of pain. Taylor et al<sup>15</sup> in their study 143 patients with trigeminal neuralgia with carbamazepine (CBZ) over a 16-year period have been reviewed. The drug was effective initially with few mild side effects in 99 patients (69%). Of these, 19 developed resistance later, i.e. between 2 months and 10 years after commencing treatment, and required alternative measures. Of the remaining 80 (56%), the drug was effective in 49 for 1-4 years and in 31 for 5-16 years. Thirty-six patients (25%) failed to respond to CBZ initially and required alternative measures, as did 8 (6%) who were intolerant of the drug. One patient developed CBZ-induced water intoxication with hyponatraemia. Subsequently hyponatraemia was excluded in 17 patients who had been taking CBZ for between 4 months and 7 years. The limitation the study is small sample size.

## CONCLUSION

Authors found that carbamazepine in combination with baclofen is more effective as compared to Carbamazepine alone in reducing pain in patients with trigeminal neuralgia.

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