



Research Article

Medical treatment for occipital neuralgia: A comparison between four medications

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Abstract

Introduction: Treatment of Occipital Neuralgia (ON) is challenging and there is no consensus about how to treat it. Current drug therapy is based on different medications from first-line pain-killers up to opioid analgesics but more importantly on antiepileptic medications and classically CARBAMAZEPINE (CA).

Methods: In this paper, we present our experience with the medical treatment of ON by comparison of the four most frequently used medications in 133 patients.

Results: Analysis of data from our study showed that PREGABALINE (PR) was on average the most effective drug with 60% satisfactory results. AMITRIPTYLINE (AM) with 53.30% ranked second. AM had the highest (14.29%) and GABAPENTINE (GA) had the lowest (8.82%) rates of side effects.

Discussion: In this study, we evaluated and compared the efficacy of four medications in the treatment of occipital neuralgia. In first and second-line treatment, the efficacy of PR appears to be higher than CA.

Introduction

Occipital Neuralgia, also known as Arnold's Neuralgia (ON) is a paroxysmal and usually unilateral headache of cervical origin. It is most commonly caused by traumatic or structural compression of the Greater Occipital Nerve (GON) and to a lesser extent of the Lesser Occipital Nerve (LON) or third occipital nerve by fascia, muscle bands, or vascular loops [1-3]. The diagnosis should be suspected in the presence of spontaneous, paroxysmal, and unilateral occipital and parietal headache reproducible by palpation of the affected nerve, most commonly the greater occipital nerve in its emergence below the suboccipital triangle beneath the obliquus capitis inferior muscle. Diagnosis is confirmed by an anesthetic blockade of GON in its emergence point out of the suboccipital triangle. Treatment is rather challenging. Therapeutic choices are medical treatment with tricyclic antidepressants or antiepileptics, local anesthetic blockade with or without corticosteroids, occipital nerve stimulation, radiofrequency ablation, and microsurgical

neurolysis. Various medications are proposed for medical treatment. Among them, CARBAMAZEPINE (CA) is the medical treatment of choice [4-8]. The alternative medications are GABAPENTIN (GA), PREGABALINE (PR), AMITRIPTYLINE (AM), etc. In the case of medical treatment failure, injection or surgery can be proposed. In this paper, we present our experience with the medical treatment of ON by comparison of above mentioned four most frequently used medications (CA, GA, PR, and AM). Surgical treatment will be the subject of a future paper.

Materials and method

Between January 2005 and December 2014, the effectiveness of the above-listed medications was evaluated in 133 patients over six months. In 41 patients, the first line of treatment was CA. In 37 patients, we began the treatment with GA, and in 34 with PR. Only in 21 patients, implemented the therapy with AM. Patients were evaluated monthly. The severity of initial, average, and maximal pain during the first week of treatment



was assessed with the Visual Analog Scale (VAS) and Simple Verbal Pain Scale (SVPS) (Table 1). Patients who had dual or combination therapy were excluded from the study. Patients who had other pathologies that could cause cervical or occipital pain were excluded too. In patients with VAS>5, SPVS>8, or maximal pain severity in the last week assessed as severe or very severe, we have changed the therapy regimen.

The choice of first or second-line treatment depended on the preference of the authors.

Results

In first-line treatment, For CA, in 22 cases (53.66%), the treatment was satisfactory: patients became pain-free or had moderate and tolerable pain (VAS<6 or SVPS<9). For PR satisfactory results were approved by 22 patients (59.46%). For GA 13 patients (38.24%) and for AM 12 patients (57.14%) had satisfactory results, respectively.

In second-line treatment, for CA, among 13 patients, 6 cases (46.15%), for PR 10 (62.50%), out of 16, and for GA 7 (58.33%) out of 12 had satisfactory results, respectively. These results were 5(41.66%) out of 12 patients for AM.

In third-line treatment, for CA 2 cases (50%), for PR 12 patients (57.14%), for GA 4 patients (36.36%), and AM 4 patients (44.44%) had satisfactory results, respectively.

As for the fourth-line treatment, given the very limited number of patients, the statistics are not significant (Table 2).

In 15 patients, we had to stop treatment due to side effects. For CA 4/41(9.76%). For PR 5/37(13.51%). For GA 3/34 (8.82%) and AM 3/21 (14.29%).

Discussion

The occipital nerve originates between the first and second vertebrae of the neck. It passes through muscles responsible for various movements of the head. This nerve, also known as Arnold's nerve, can easily become "trapped" and irritated as

it passes through these muscles. The occipital nerve crosses the insertion of the trapezius or sternocleidomastoid muscles, which are linked to the neck, shoulders, and head. As a result, any movement of the head can cause pain due to positions that trap the nerve. The occipital nerve ends its course in the scalp.

"Occipital neuralgia can be caused by various factors such as local muscle contracture due to unbalanced posture, osteoarthritis, trauma, or even stress. However, the cause is not always apparent."

Considering the example of Trigeminal neuralgia (TN), the vast majority of papers recommend CA as a first-line treatment for TN [9-18]. Al-Quliti demonstrates that PR was effective in 50% - 74% [9]. Zakrzewska, et al. reported no efficiency for GB in trigeminal neuralgia [19]. There is very little literature on the application of AM in the treatment of TN. Lawal, et al. showed a satisfactory effect of AM combined with PR in three cases suffering refractory trigeminal neuralgia [20].

The literature on medical treatment of Occipital Neuralgia is however very poor [21-28]. There is no consensus on the duration of treatment [22-25,27,28]. In a study carried out in China for the treatment of ON by acupuncture, in the control group treated with CA, the overall treatment effectiveness rate was 71.4%. However, the parameters considered in defining the effectiveness of treatment were ambiguous in that paper [5]. For the other three medications, no results have been published yet.

Analysis of data from our study showed that PR was on average the most effective drug with 60% satisfactory results. AM with 53.30%, CA with 43.94%, and GA with 38.75% satisfactory results achieved the next ranks, respectively, although the side effects of PR and AM are more frequent than those of CA and GA.

AM had the highest (14.29%) and GA had the lowest (8.82%) rates of side effects. Two patients among three developed somnolence and one dizziness under AM. For GA, one patient had Clumsiness and two patients presented dizziness and somnolence. Among four patients who have been under CA, two presented drowsiness, one patient had irritability, and one presented somnolence and drooling. For PR, 3 patients of 5 presented somnolence. One presented xerostomia and one developed bloating of the face and the arms.

Conclusion

In this study, we evaluated and compared the efficacy of four medications in the treatment of occipital neuralgia. In the first and second-line treatments, the efficacy of Pergabaline appears higher than Carbamazepine.

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Table 1: Simple verbal pain scale.

	No pain	Mild	Moderate	Intense	Very intense
PAPT	0	1	2	3	4
UP since 1 W.	0	1	2	3	4
TMIP since 1W.	0	1	2	3	4

PAPT = Pain At the Present Time; TMIP = The Most Intense Pain; UP = Usual Pain; W. = Weak

Table 2: First to fourth-line treatment.

	CA	PR	GA	AM
FLT	41	37	34	21
SLT	13	16	12	12
TLT	4	21	11	9
FOLT	5	9	5	13

FLT = First-Line Treatment; SLT = Second Line Treatment; TLT = Third Line Treatment; FOLT = Fourth Line treatment



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