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Research Article

### EFFICACY OF ANTI MIGRAINOUS THERAPY IN THE TREATMENT OF VERTIGO & NEURO-OTOLOGICAL SYMPTOMS OF MIGRAINE

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**Abstract:**

**Background:** The association between hearing and balance disorders with migraine is known since the times of the ancient Greeks, when Aretaeus from Cappadocia in 131 B.C, made an accurate and detailed description of this occurrence during a migraine episode. Yet to this day, the condition remains widely under-diagnosed and poorly treated. **Objective:** To study the efficacy of anti-migrainous therapy in the treatment of vertigo and neuro-otological symptoms of migraine. **Methodology:** This observational study, was conducted upon a sample of 377 migraine patients (chosen via non-probability – consecutive sampling) diagnosed according to the International Headache Society – IHS Criteria, presenting with complaint of vertigo (corresponding to the criteria of definite or probable migrainous vertigo) and other neuro-otological manifestations of migraine to the medical outpatient department of Abbasi Shaheed Hospital. The study was carried out from February 5, 2018 to August 31, 2018. Data obtained was analyzed using SPSS version 21.0 and MS. Excel 2013. **Results:** Out of 377 participants 121 were males and 256 were females, with a mean age of 31 years for males and 23 years for females. 48 patients reported vertigo as a classical aura symptom, 96 claimed to have experienced vertigo during and 186 independently or just during their headache episodes. 47 patients only experienced vertigo independently of the headaches. The quality of the vertigo was variable. 38 had spinning vertigo, the most common symptom was episodes of non-spinning dizziness with instability while walking (204) followed by positional vertigo (135). Nausea accompanying the vertigo was only reported by 9 patients and occasional vertigo associated falls by 6 patients. The duration of the vertigo episodes had a wide range from minutes to hours with a mean value standing at 23 minutes. Other symptoms included phono-phobia (23) and tinnitus (17). **Conclusion:** A careful evaluation of the results revealed that while routine anti-migrainous therapy is effective for controlling headache, the episodes of vertigo and other associated neuro-otological symptoms persisted nonetheless. Thus options such as switching to targeted medication such as lamotrigine for vestibular complaints should be explored.

**Keywords:** Migraine, Vertigo, Tinnitus, Anti-Migrainous Therapy & Neuro-Otological Symptoms.

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**INTRODUCTION:**

Dizziness and instability are highly prevalent pathologies and among the most common complaints brought before healthcare professionals for medical consultations. [1] 15-17% of women and 5-8% of men suffer from migraine, and around 20% of the general population are affected by vestibular disorders. [2]

A clear increase in the incidence of vertigo and instability along with a myriad of other neuro-otological symptoms has been observed in different series of patients with migraine and the correlation is too great to be by chance alone. [3]

Due to differing presentations, specific terms have been coined to identify them, such as migraine associated recurrent vertigo (MARV), benign paroxysmal positional vertigo (BPPV), basilar-type migraine, neurological conditions with migraine and vertigo and vestibular-type migraine. [4] With no uniform diagnostic criteria and limited knowledge of the underlying pathology of any of the above. [5]

The real incidence of these neuro-otologic entities too is yet to be clarified, due to under-diagnosis and lack of complete understanding of the symptoms. [6] Since such basic knowledge pertaining to the disease is lacking, it is only natural that no proper therapeutic guideline to treat it is absent.

A long list of drugs are available in the market but the therapeutic efficacy is debatable. [7] Interestingly enough most healthcare professionals still choose to administer routine anti-migrainous drugs (such as ergot alkaloid derivatives, triptans, and serotonin 5-HT receptor agonists) [8] to treat vertigo and other neuro-otological symptoms even though in as much as 10% of the cases, these symptoms are not coupled with headache. [9] This research hopes to assess the

efficacy of anti-migrainous therapy in the treatment of vertigo and neuro-otological symptoms of migraine

**METHODOLOGY:**

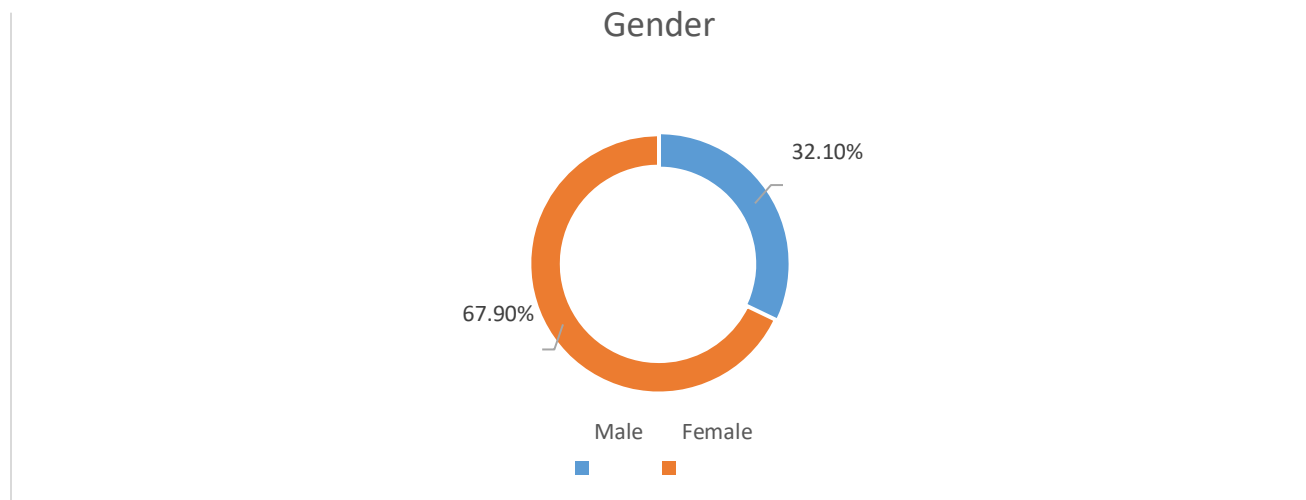
This observational study, was conducted upon a sample of 377 migraine patients (chosen via non-probability – consecutive sampling) diagnosed according to the International Headache Society – IHS Criteria, presenting to the medical outpatient department of Abbasi Shaheed Hospital. Patients were surveyed as to the nature of their vestibular symptoms, and the therapeutic response of these symptoms and their headaches to various anti-migrainous medications using a standardized interview-based questionnaire that inquired for the frequency and duration of their episodes of headache, vertigo and neuro-otological symptoms. Patients were asked to rank therapeutic efficacy utilizing a numeric scale. The efficacy of the medications in treating vertigo and neuro-otological symptoms was compared against their ability to alleviate headaches. The study was carried out from February 5, 2018 to August 31, 2018. Data obtained was analyzed using SPSS version 21.0 and MS. Excel 2013.

**Inclusion Criteria:** Patients who identified vertigo (corresponding to the criteria of definite or probable migrainous vertigo) and other neuro-otological manifestations of migraine were entered into the study and made to undergo a full neurological and neuro-otological examination.

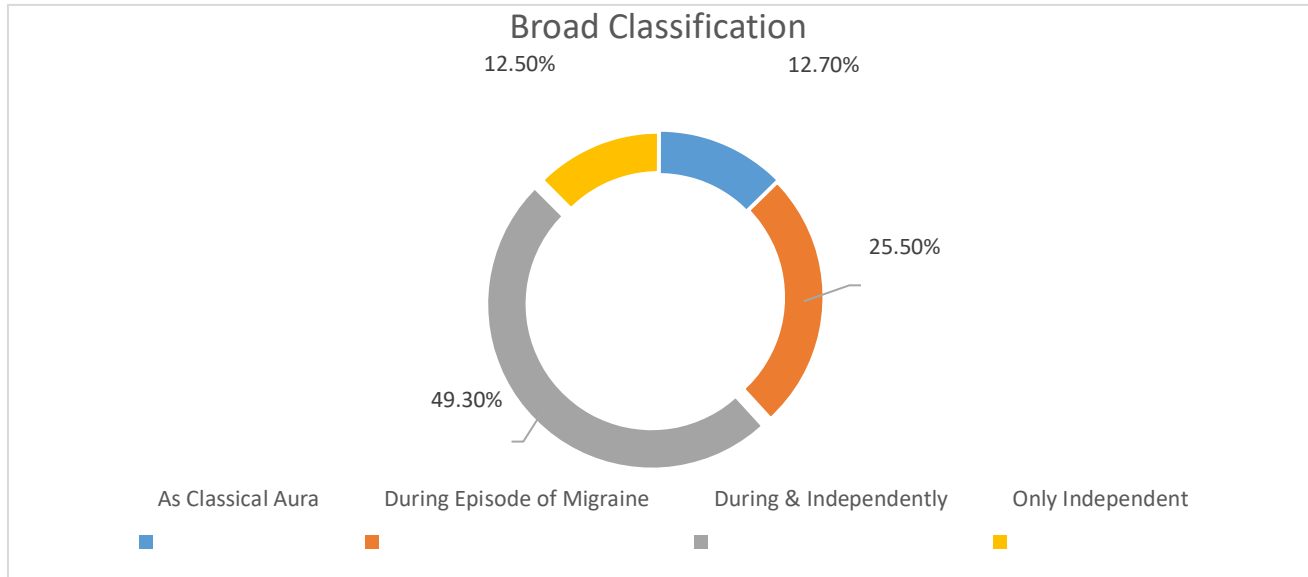
**Exclusion criteria:** Patients with serious or unstable medical conditions and coexisting depression.

**RESULTS:**

Out of 377 participants 121 were males and 256 were females, with a mean age of 31 years for males and 23 years for females.

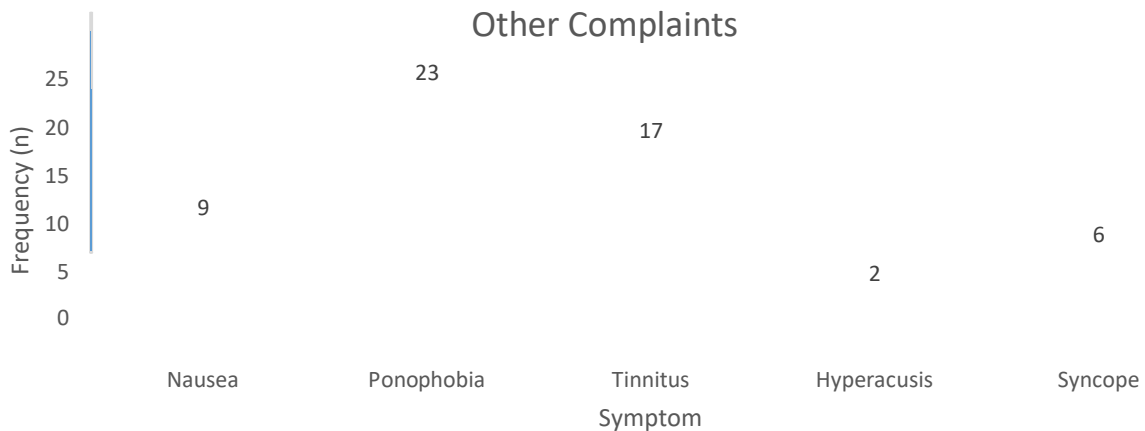


48 patients reported vertigo as a classical aura symptom, 96 claimed to have experienced vertigo during and 186 independently or just during their headache episodes. 47 patients only experienced vertigo independently of the headaches.



The quality of the vertigo was variable. 38 had spinning vertigo, the most common symptom was episodes of non-spinning dizziness with instability while walking (204) followed by positional vertigo (135). Nausea accompanying the vertigo was only reported by 9 patients and occasional vertigo

associated falls by 6 patients. The duration of the vertigo episodes had a wide range from minutes to hours with a mean value standing at 23 minutes. Other symptoms included phono-phobia (23) and tinnitus (17).

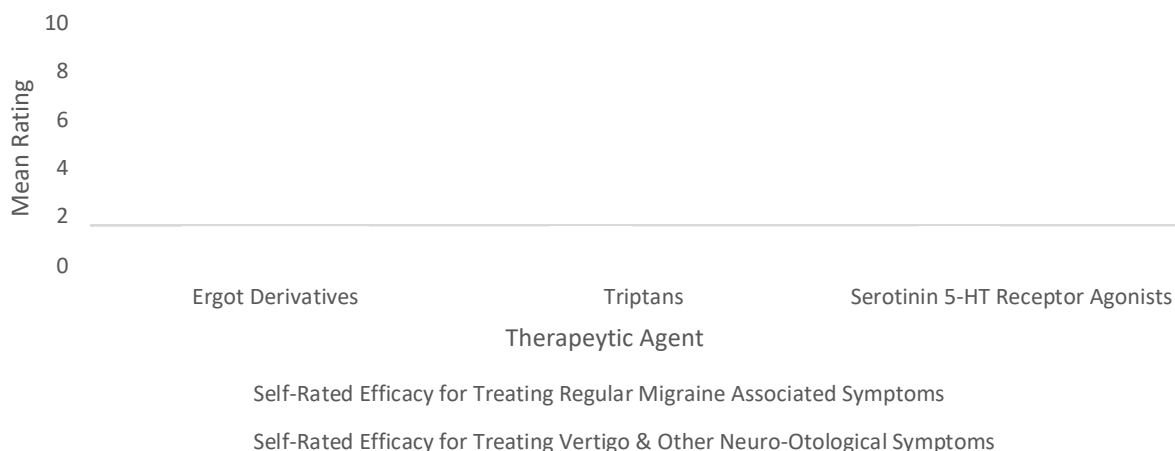


Among the exclusive anti-migrainous agents being used, 97 patients were using alkaloid derivatives, 128 were taking triptans, and 64 patients were using serotonin 5-HT receptor agonists. Other medications, such as NSAIDs were also being used by 83 patients in conjunction with the anti-migrainous therapy. The patients taking ergot derivatives alone rated their

symptoms to be better controlled than patients taking triptans and serotonin 5-HT receptor agonists. Patients under combined therapy i.e. taking 2 or more drugs in conjunction yielded no significant benefit. Overall, the anti-migrainous therapy had no significant impact on the frequency of episodes of neuro-otological

symptoms and the self-rated therapeutic efficacy was not encouraging.

### Therapeutic Efficacy



#### DISCUSSION:

Migraine related vertigo is a common cause of episodic dizziness, vertigo and disequilibrium. The mechanism is still debated, probably central and peripheral factors come into play and might be related to newly recognized ion channel disorders. There is no specific diagnostic test for migraine related vertigo. The occurrence of vertiginous spells in a migraine patient should raise the possibility of migraine related vertigo. The vertiginous spells can be very variable in duration (seconds to days) and intensity from mild to inability to walk. Appropriate vestibular and neurological testing has to be done to rule out other peripheral or central causes. [10]

Prophylactic anti-migrainous treatment for headaches such as beta-blockers and ergot preparations are often used in preventing migraine related vertigo and in battling other neuro-otological symptoms, however, is lack of solid evidence supporting the efficacy of the practice. Furthermore, these drugs have limitations to their use particularly in asthmatic and cardiovascular diseases. [11]

The literature is silent regarding the nature of vertigo occurring in patients with migraine, we observed that among our subjects 38 had spinning vertigo, the most common symptom was episodes of non-spinning dizziness with instability while walking (204) followed by positional vertigo (135). Bir et al [12] reported that the duration of vertigo spells lasted for

less than minutes in nearly half of their study patients, our study too reports a mean time limit a comparably less period. Auditory symptoms are generally considered to be less common than vestibular symptoms in migraine and our study too reported a similar scenario. [13]

The efficacy was not rated very highly by the subjects. It is advised that Lamorigine might used as option to treat migraine related vertigo, particularly if the frequency of vertigo is higher than that for headache attacks. This constellation can often be observed, particularly in elderly patients. Because of its favorable side effect profile it should be considered if accompanying pulmonary or cardiovascular problems limit the use of betablockers or Ca channel blockers and if the problem of drowsiness is to be avoided often associated with antidepressants or benzodiazepines. [14]

#### CONCLUSION:

A careful evaluation of the results revealed that while routine anti-migrainous therapy is effective for controlling headache, the episodes of vertigo and other associated neuro-otological symptoms persisted nonetheless. Thus options such as switching to targeted medication such as lamotrigine for vestibular complaints should be explored.

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