Phenytoin in the Treatment of Osmophobia in Migraine Patient: A Case Report

A 38-year-old woman was presented to a headache clinic with a 12-year history of headaches. Patient already fulfilled the whole diagnostic criteria for migraine without aura. She reported the headaches were pulsated, localized to the right front temporal region, at a frequency of 1-2 episodes per month, with mild to moderate intensity and lasted 4-72 hours. She also complained of severe osmophobia during and between headache attacks. In the pain free period, she had extreme intolerance to any odors. She could not tolerate odorants such as perfume, cleaning products, paints, pesticides, cigarette smoke etc. as odors triggered nausea. There were no cranial autonomic symptoms such as lacrimation, conjunctival injection, nasal congestion, rhinorrhea, forehead/facial sweating, ptosis or meiosis. Migraine prophylaxis had been administered daily for the past two years.

The most likely diagnosis of this presentation is:

- Depression
- Migraine associated Osmophobia
- Allergy

Introduction:

There is significant association between odors and primary headaches, particularly to migraine with or without aura and tension-type headache. The literature of its occurrence in secondary headaches is very scarce. In migraine patients, prevalence of osmophobia during the headache attacks ranges from 20.0% to 81.7% and in the period between headache attacks, this prevalence ranges from 24.0% to 53.3%. According to the patient, osmophobia caused great impact on her quality of life, more than headache. She would like to treat only her osmophobia.

Examination:

Her general medical and neurological examinations were normal. Patients brain MRI and CT were normal. Results were normal of routine blood tests like biochemical, hematological liver, kidney and metabolic investigations. After administration of drugs such as beta-adrenergic blockers, tricyclic antidepressants, calcium channel blockers, serotonergic antagonist and anti-epileptics, there were marked improvement in the frequency and intensity of headache attacks but osmophobia remain unchanged. However, phenytoin, an anti-epileptic drug not used in migraine prophylaxis, has been suggested to treat the central and autonomic disturbances of migraine, such as osmophobia, hyperosmia, pain in the limbs and motion sickness that occur in the pain-free period.

Treatment:

The treatment was aimed to cure and maintain osmophobia. A prophylactic treatment with phenytoin was started to osmophobia, at a dose of 100 mg, once a day. Her improvement was accompanied through an osmophobia diary which was filled out by patient herself during the treatment period. There was reduction in the frequency and intensity of osmophobia in the first two months of treatment, with disappearance of this symptom within 90 days. Phenytoin was maintained for another three months.

Discussion:
Patient met the diagnostic criteria for migraine without aura, according to International Classification of Headache Disorders, third edition, beta version (ICHD-3β), but her main complaint was a severe osmophobia. Although osmophobia is not a diagnostic criterion for migraine, but many studies show that this symptom is highly prevalent and is useful to differentiate migraine from tension-type headache. Like headache, osmophobia affects the quality of life of migraine patients and hinders the performance of their professional activities, especially in those who work in environments with strong odors, such as in perfumery, gas station and the selling of insecticide or beauty products. Many drugs are used to prevent headache attacks, but unfortunately, there is no specific treatment for osmophobia. There is a study published in 1986 that suggests treating the central and autonomic disturbances of migraine that occur in pain-free period, such as osmophobia, hyperosmia, limb pain and motion sickness. Phenytoin is suggested in the treatment of osmophobia.

Phenytoin is an antiepileptic drug that is primarily used for controlling partial seizures, tonic-clonic or clonic-generalized. However, it is also used to treat idiopathic trigeminal neuralgia and vestibular paroxysmia. During the follow-up of this patient, scores 1, 2, 3 and 4 were assigned, respectively, for mild, moderate, severe and very severe intensities during the treatment period with phenytoin. Then we multiplied the four intensity groups by its respective scores and the sum of these products was called osmophobia index (OI). The reduction of this index indicates an improvement in the intensity of osmophobia.

**Learning:**

In the present case, the approach to prevent osmophobia is fulfilled. From the experience in this case, phenytoin should be considered as possible prophylactic treatment for osmophobia between headache attacks in migraine patients.

**References:**


Therapeutic, Phenytoin, Osmophobia, Migraine, Head, Anti-seizure agent, Case report, MRI, CT scan