



# The Role of Lifestyle Modifications in the Management of Migraine Associated Vertigo

## Migrene Baęlı Vertigoya Yaklaşımında Yaşam Tarzı Deęişikliklerinin Rolü

Migrene Baęlı Vertigo / Migraine Associated Vertigo

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### Özet

Ama: Migrene baęlı vertigo hastalarında vertigo ataklarını tetikleyen potansiyel faktörleri tespit etmek ve yaşam tarzında deęişikliklerin etkinlięini deęerlendirmek. Gere ve Yöntem: 23 migrene baęlı vertigo hastasının tıbbi kayıtları geriye dönük olarak analiz edildi. Vertigoya yaklaşımda diyet,uyku problemleri, fiziki aktivite ve migrenle iliřkili dięer faktörleri kapsayan yaşam tarzında deęişiklikleri tedavi olarak belirlendi. Bulgular: Semptomların řiddetinde ve rekürrensinde %50 den fazla azalma tedaviye yanıt olarak tanımlandı. Toplamda hastaların %69,6 sı vertigo ataklarının semptom řiddeti ve sıklığında tamamen iyileřme veya dramatik azalma gözlemlendi. Tartıřma: Yaşam tarzında deęişiklik yüksek oranda vertigonun sıklık ve řiddetinin azalma sağlaması ile migrene baęlı vertigoda etkin bir tedavidir.

### Anahtar Kelimeler

Vertigo; Migren; Tetikleyici Faktörler; Tedavi

### Abstract

Aim: To determine potential factors that may trigger vertigo attacks and evaluate the efficacy of lifestyle changes. Material and Method: We analyzed medical records of 23 patients with migraine associated vertigo retrospectively. In the management of vertigo, lifestyle modifications, including limitation of the possible triggering factors such as diet, sleep problems, stress, physical activity, and other factors associated with migraine were determined for therapy. Result: Response to therapy was defined as greater than 50 % reduction in symptom recurrence and severity rate. Overall, 69,6 % of patients experienced resolution or dramatic reduction of frequency and severity in symptoms of their vertigo attacks. Discussion: With the high rate reduction of the vertigo frequency and severity, life-style modifications is effective therapy for the common problem of migraine associated vertigo.

### Keywords

Vertigo; Migraine; Triggering Factors; Therapy

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## Introduction

Migraine-associated vertigo (MAV), also known as vestibular migraine or migrainous vertigo, is a common cause of repeated episodes of vertigo in adult patients [1]. The duration of attacks varies from days to months and usually lasting minutes to hours. Unlike classic migraine, MAV mostly occurs independently of headaches. Vertigo can sometimes be the only symptom of migraine without headache. Triggers to migraine have been identified and these include routine physical activities, stress, anxiety, hypoglycemia, fluctuating estrogen levels, irregular sleep, certain foods, and smoking. Like migraine headaches, there are some similar triggers include stress, sleep deprivation, and hormonal changes in MAV. Non-pharmacological treatments such as dietary changes, regular sufficient sleep, reduction of stress, comfortable exercise habit and avoidance of other triggers are recommended as they are for migraine [2-3]. Most drugs are also used for the prevention of MAV [1].

In this study, we aimed to determine the potential factors that might trigger vertigo attacks and evaluate the efficacy of lifestyle changes to prevent vertigo attack including dietary changes regular sleep, stress reduction, regular exercise and physical activity on patients that diagnosed with MAV.

## Material and Method

Twenty-three patients affected by MAV were selected from vertiginous patients referred to our clinic from August 2010 to September 2012.

The criteria for inclusion in the study are as follows: [1] diagnosis of MAV based on the adopted criteria used by Murofushi et al. [4] which was processed on the basis of Neuhauser's [5] and Brantberg's criteria [6]. This included presence of moderate to severe, recurrent, or episodic vestibular symptoms; migraine headache according to the International Headaches Society (IHS) criteria, synchronization of vertigo attack with migraine (at least one of migrainous headache, photophobia, phonophobia, visual or other auras occurring during at least two vertiginous attack), absence of associated unilateral hearing loss, or other disease causing vertiginous attack [2] information on pathophysiology [3] differential diagnosis of peripheral vestibular disorder.

All patients were asked for possible MAV triggers. Food, stress, irregular meals, sleep pattern, and medications that may trigger MAV were evaluated. Recommendations were individualized according to symptoms and triggered factors. Medical management included dietary changes, sufficient sleep, regular physical activity and exercise, minimizing major-certain stress factors. As a common food triggers cheese, foods containing preservative (MSG), processed meats, fresh baked yeast goods, pickles, dried fruits, alcohol, artificial sweeteners, chocolate, nuts, beverages were defined. The efficacy of the modifications was evaluated by questionnaire divided into three groups (no recurrence, reduction in symptoms duration and severity, no improvement). Frequency and severity of attacks were also determined.

## Results

There were 23 patients (16 women, 7 men) with an average age of 36.5 years (range,24-63 yr). Mean follow-up time was 16 weeks, with a range of 8 to 17 weeks. Most common potential

factors that may have triggered vertigo attacks was consuming cheese or its products (Table 1).

5 patients (21.7%, 4 women, 1 men) reported complete resolution of symptoms, 11 (47.8%, 7 women, 4 men) reduction of frequency and severity in symptoms and 7 (30.4% 5 women, 2 men) no improvement. Response to therapy was defined as greater than 50 % reduction in symptom recurrence and severity rate. Overall, 69,6 % of patients experienced resolution or dramatic reduction of frequency and severity in symptoms of their vertigo attacks.

Table 1. Common possible food triggers among patients

Consuming cheese or its products (cheese in all forms, cheeseburgers)	23
Excessive intake of caffeine-containing foods (tea coffee, coke or chocolate)	16
Excessive amounts of nuts intake (nuts, peanuts, pistachios, sunflower seeds)	13
Excessive eating fresh or dried fruits (citrus fruits, figs, raisins, kiwi),	9
High dairy products consumption (buttermilk, milk powder, yogurt, ice cream)	9
Consuming more processed food (fast foods chips, sauces, ketchup, mayonnaise)	7
High consumption baked yeast goods (donuts, muffins, cakes, breads, rolls, pizza)	5
Eating lots of processed meat products (sausage, salami, bacon)	5

## Discussion

MAV is a term used to describe episodic vertigo in patients with history of migraine or with other clinical features of migraine. Migraine is considered to be the second most common cause of vertigo and the most common cause of spontaneous episodic vertigo [2]. Migraine (14%) and vertigo (10%) are common disorders, affecting the general population. 3.2% of the population have both migraine and vertigo (MAV) [3].

The pathophysiology of MAV is not fully understood but both central and peripheral defects have been observed. The links between the vestibular nuclei, the trigeminal system, and thalamocortical processing centers provide the basis for the development of a pathophysiological model of MAV [7].

The headaches and vestibular symptoms of MAV may not be temporally associated [8]. Migraine itself can affect vestibular pathways even if patients do not complain of vestibular symptoms. Vestibular examination alone does not provide enough information for a diagnosis of migrainous vertigo. A careful clinical history is fundamental for assessing the profile of patients with migrainous vertigo [9]. MAV presents with attacks of spontaneous or positional vertigo lasting minutes to days. Headaches are often absent during acute attacks, but other migrainous features such as photophobia or auras, may be present [3]. Diagnostic tests usually show nonspecific abnormalities that are also seen in patients with migraine who do not experience vestibular symptoms [8].

There are many conditions that are thought to trigger and increase the risk of having a migraine attack. A certain trigger will not induce a migraine in every person. Also in a single migraine sufferer, a trigger may not cause a migraine every time [2,8].

Dietary habits can also play a role. Fasting, dehydration, or skipping meals may also cause vertigo. Some of the most common foods, beverages, and additives that may be associated with migraine. Foods high in tyramine (aged or processed cheese, processed meats, certain beans, onions, olives, pickles, avocados, raisins, nuts) caffeine-containing foods (chocolate, cocoa, coffee, tea, coke etc.) cultured dairy products (sour cream, buttermilk, yogurt), fresh fruits (citrus fruits, papaya, red plums, raspberries, kiwi, pineapple) fresh baked yeast goods (donuts, muffins, cakes, breads, rolls, pizza), dried fruits (figs, raisins, dates), artificial sweetener (aspartame) alcoholic beverages (red wine, beer, and sherry) and foods contains preservatives like MSG may trigger symptoms in MAV [10-12].

Sleep routine is very important. Changes in sleep patterns may cause vertigo like napping, oversleeping, and too little sleep. Having poor sleep routine may trigger migrainous vertigo or cause migraines to become more frequent. Although getting enough sleep is important for people with migraines, having a sleep routine is even more critical. Too little sleep, too much sleep at one time, irregular afternoon naps or any disruption in the regular sleep pattern may trigger vertigo [13,14]. We recommended our patients with MAV to go to bed at the same time and wake up at the same time every day.

The therapeutic effects of exercise like moderate aerobic exercise are well documented and still an option for the prophylactic treatment of MAV. Regular physical activity may improve overall health and also reduce stress. Exercise in some cases, is noted as a trigger for migraine. Exercising suddenly with no prior planning (increased oxygen demand), not eaten properly before exercising (decreased blood glucose levels), not taken sufficient fluids during exercise (dehydration), exercising in heat, over-exercising and pushing themselves too hard may have the opposite effect and bring on an attack. We suggested mild regular exercise to our patients with MAV like jogging, swimming, cycling, and walking that our patients may enjoy and set as a regular routine. This offered the most benefits to those with migraine. Drinking fluids before, during and after exercise, eating at least an hour and a half before exercising, warming up before and after exercise, wearing the correct clothing, and choosing a comfortable exercise program is very important [15-17].

### Conclusion

With the high rate reduction of the vertiginous episodes frequency and severity, life-style modifications is effective therapy for the common problem of MAV. Satisfactory control of symptoms was achieved in 16 (69,6%) of 23 patients complaining of episodic vertigo in the present study.

### Competing interests

The authors declare that they have no competing interests.

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