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NON-PHARMACOLOGICAL APPROACH FOR PREVENTION OF MIGRAINE

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Abstract: *Migraine is a highly prevalent headache disorder that has a substantial impact on the individual and on society. It is the second most common cause of vascular headache which affects approximately 15% of women and 6% of men. Exact pathogenesis of migraine is not known but various triggering factors are present which can precipitate migraine headache. Most common symptom of migraine headache is throbbing pain and other associated symptoms are vomiting, nausea, photophobia, phonophobia, etc. The impact of headache on people's lives is diverse. As a repetitive and severe event, it results in disability and reduction of quality of life and productivity of the individuals. Management of headaches requires a non-pharmacological management including identification and avoidance of the triggering factors, behavioral therapy, psychological intervention, and controlled life style.*
Keywords: *Migraine, triggering factors, life style, behavioral therapy, psychological intervention.*

Introduction: Migraine is defined as a disorder characterized by intermittent headache episodes, accompanied with nausea, photophobia and/or phonophobia [1]. It is the second most common cause of vascular headache which affects nearly 15% or approximately one billion people worldwide. It is more common in woman at 19% than men at 11% [2]. In the United States, about 6% of men and 18% of women get a migraine in a given year, with life time risk about 18% and 43% respectively [3]. Typically the headache is unilateral and pulsating in nature, lasting from 2 to 72 hours and generally aggravated by physical activity. Up to one-third of people with migraine headaches perceive an aura: a transient visual, sensory, language, or motor disturbance which signals that the headaches will soon occur [4]. Migraine attacks seem to result from patho-physiological mechanisms activated by specific trigger factors. The recurrence of migraine attacks may depend either on a reduced threshold or on particularly strong or frequent trigger factors or both [5]. Biochemical research has provided evidence for certain physiologic characteristics in migraineurs, which have been proposed as predisposing factors for migraine. These include platelet serotonin (5-HT) metabolism, platelet activation, and increased sensitivity to nitric oxide (NO) donors, reduced levels of metabolic enzymes, abnormal opiate receptor function, and electro-encephalographic (EEG) abnormalities [6]. The impact of headache on people's lives is disorders in interpersonal communications, job productivity, and family life [7]. According to findings of a study, 89% of individuals reported a very low level of job performance during migraine attacks [8]. These various disability leads to reduction of quality of life, so find a solution to improve the quality of life with an integrative approach.

Phases of Migraine: There are four possible phases to a migraine, although not all the phases are necessarily experienced [4].

1. Prodrome phase, which occurs hours or days before the headache
2. Aura phase, which immediately precedes the headache
3. Pain phase, also known as headache phase

4. Postdrome phase, the effects experienced following the end of a migraine attack

Triggering Factors of Migraine: For headache and migraine in particular, several triggering factors are commonly mentioned [9].

Physical Factors: Fatigue, strenuous physically activities, too much or too little sleep, watching TV, starring at the computer screen or other illuminated objects, travelling

Dietetic Factors: Long gaps between meals, fasting, dehydration, chocolate, cheese and other dairy products, alcohol particularly red wine, tea, coffee, cold drink, ice cream, citrus fruits, nut, onion, sea food, spicy food, fast food, monosodium glutamate (used as a preservative in many prepared food), Nitrates or Tyramin containing food stuffs, Aspartame (dietary sweetener)

Environmental Factors: Flickering/ flashing light, bright light, loud noise, intense or penetrating smells, Smoking, Stuffy atmosphere, and Change of climate / weather.

Emotional Factors: Tension, worry, shock, Depression, Excitement, stress, and drastic changes in the daily routine.

Hormonal Factors: Menstruation and the premenstrual period, Puberty, Pregnancy, Contraceptive pill, Menopause / Hormone replacement therapy [10].

Medications: Vasodilators (nitroglycerin, isosorbide dinitrate), Anti-hypertensive (nifedipine, captopril, prazosin, reserpine, minoxidil), Antibiotics (trimethoprim-sulfa, griseofulvin), Selective Serotonin Reuptake Inhibitors

Diagnostic Criteria as per International Headache Society [4]

I. Migraine with Aura (Classical Migraine): At least two attacks that fulfil the following criteria:

1. Aura consisting of at least one of following, but no muscle weakness or paralysis:
   - Fully reversible visual symptom (e.g. flickering light, spots, lines, loss of vision)
   - Fully reversible sensory symptom (e.g. pins and needles, numbness)
   - Fully reversible dysphasia (speech disturbance)

2. Aura at least two of the following characteristics:
   - Visual symptom affecting just one side of the field of vision and/or sensory symptoms affecting just one side of the
   - At least one aura symptom develops gradually over more than 5 minutes and/or different aura symptoms occur one after the other over more than 5 minutes
   - Each symptom least from 5-60 minutes

II. Migraine without Aura (Common Migraine)- At least five attack that fulfill the following criteria:

1. Headache attacks lasting 4-72 hours when untreated
2. At least two of following characteristic:
   - Unilateral location
   - Pulsating quality
   - Moderate or severe pain intensity
   - Aggravation by or causing avoidance of routine physical activity (e.g. walking or climbing stairs)
3. At least one of the following associated symptom clusters:
   - Nausea and/or Vomiting
   - Photophobia and Phonophobia

Managements of Migraine: Non-pharmacological treatment of migraines can be an important component of migraine management. Such treatments can take many forms, such as keep headache diary, avoidance of triggers, behavioural therapy, Psychological intervention and lifestyle modification. All these have been essential elements of migraine management [4].

Keep a Headache Diary: The exact causes of migraines are not clear, and migraines seem to be triggered by a wide variety of different things. A headache diary can help to determine more common triggers so use substitute of these triggers. Review a record of things done, eaten, experienced, and felt during the 24 hours prior to the onset of a migraine and it can also help monitor the effectiveness of treatments.

Avoiding Triggers: One of the best ways of preventing migraines is recognizing the things that trigger an attack. Foods containing tyramine and nitrites are brinjal, potatoes, sausage, spinach, sugar, cheese, beer, and red wine. Other tyramine containing foods include cheese, chocolate, fried food, bananas, plums, broad beans, spinach, tomatoes, and citrus fruit. Foods with high levels of MSG or artificial additives might also contribute

to triggering a migraine. Insomnia or disturbed sleep reduces energy and tolerance which increases the chances of a migraine. Bright light or certain colours of light, Shock, stress, or worry, loud noise, especially continuous. Changes in the weather or climate, a dry atmosphere or a warm, dry wind can trigger migraines. By knowing these triggering factors individual can reduce the migraine frequency.

Behavioral Treatments: Daily exercise for 15–20 minutes is helpful for reducing the frequency of migraines. Sleep is often a good solution if a migraine is not as severe as to prevent it, as when a person awakes the symptoms will have most likely subsided [11].

Migraine follows a particular cycle, attempting to interrupt the cycle may prolong the symptoms in some cases. Without using painkillers sometimes decrease the length of an episode. This is especially true of cases where vomiting is common, as often the headache will subside immediately after vomiting. Penzien et al 2002 reported that Meta-analytic literature reviews of behavioural interventions have consistently identified clinically significant reductions in recurrent headache.

Psychological Intervention: Rains et al 2005 reported that self-regulation strategies, such as relaxation and biofeedback are reported as the most commonly used treatments for headache. Relaxation skills are used to decrease headache by enabling patients to modify their own headache-related physiological responses and decrease sympathetic arousal. These treatments emphasize patient involvement and personal responsibility, facilitating the use of effective strategies for coping with pain and associated headache symptoms. Active involvement of patients can lead to increased confidence in abilities to prevent and manage Migraine [12].

Andrasik and Shwartz 2006 reported that Practice of daily relaxation techniques reduce tension and stress throughout the body and incorporate relaxation into daily life situations, particularly when Migraine headaches. Thus Relaxation has resulted in generally positive effects on migraine headache.

Lifestyle Modification: Many times, unhealthy lifestyle habits serve as a trigger for Migraine. Intervention strategies assist patients and families with lifestyle changes by discussing the importance of maintaining healthy lifestyle habits. Specifically, interventions focus on the importance of adequate fluid hydration with limited use of caffeine, place strong emphasis on regular exercise and adequate nutrition, including not skipping meals and eating a balanced diet, and provide recommendations for better sleep hygiene, such as consistent sleep and wake times and development of bed time rituals [13].

Conclusion: In the modern era, Migraine reduces the quality of life and decrease the productivity of individual. There is no specific etiopathogenesis of Migraine, but various triggering factors are responsible for it, one of the leading triggers of migraines is stress. There is evidence that different approach to reduce the impact of stress. The use of psychological techniques like counselling, behavioral therapy etc. can help people cope with their pain more effectively. Maintain diary to identified migraine triggers, to avoid them as early as possible. Individual lifestyle changes are very important including avoid certain types of foods item and emotional situations. Thus, a non-pharmacological approach is the better modality in management of migraine pain.

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