
RESEARCH ARTICLE

Meta-analysis with complementary and supportive medicine methods in migraine headache

Dr. Muhammet Emin¹ and Prof. Dr. Cemal Çevik²

¹²Lokman Hekim University, Department of Traditional and Complementary Medicine

Corresponding Author: Dr. Muhammet Emin, **E-mail:** drmugan@hotmail.com

ABSTRACT

This study aimed to conduct a meta-analysis of the effects of complementary and supportive medical methods on migraine headache. In the study, peer-reviewed scientific publications containing complementary and alternative medicine methods related to migraine were examined and analyzed with semiotic analysis. Then, the scanned publications were examined with content analysis. In the light of the findings obtained from the content analysis, the effectiveness of complementary and alternative medicine methods in migraine headache was compared by meta-analysis. The rate of studies including all migraines was 23.3%, the rate of migraine with aura was 33.3% and the rate of migraine without aura was 30.0%. The rate of studies including general migraine as a headache was 13.3%, and tension-type headache and migraine were used closely. The distribution of content indicator themes was 26.7% for ozone, 23.2% for alternative medicine and 20.0% for complementary medicine. The proportion of studies that included both alternative and complementary medicine was found to be 30.0%. The distribution of effect type indicators according to themes was 26.7% physiological-ozone, 30.0% physiological-acupuncture, 23.3% active substance and 20.0% placebo. Although modern medicine cannot provide a permanent and biological solution for migraine type pain, complementary medicine methods and traditional medicine approaches provide much more than just painkillers for symptoms. In treatment methods such as acupuncture that do not use medical agents, the placebo effect has an important function in the symptomatic treatment of migraine type headaches, although the mechanisms are not yet fully known.

KEYWORDS

Migraine, headache, supportive medicine, complementary medicine

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1. Introduction

Migraine is a health problem whose cause and treatment methods are not yet fully known, and significantly affects individuals' quality of life and daily activities (1,2). There are two basic types of migraine with and without aura; migraine with aura is accompanied by strange neurological sensations before the actual pain (3). In migraine without aura, the pain occurs more mechanically and directly, and is not accompanied by neurological disorders as in migraine with aura. In the definitions of migraine in the literature, there is a picture characterized by constriction in the blood vessels that affects nerve signals and does not have another underlying comorbid cause (4,5). This situation shows that the etiology of migraine is not fully known, and clinically, it gives general symptoms such as increased sensitivity, nausea, vomiting, speech and vision difficulties (6). Therefore, both in terms of discrimination and etiology and clinical picture, the current treatment methods for migraine are quite limited and symptomatic.

The most limited treatment methods for migraine are painkillers (3,4). In addition, retreating to a dark and quiet room and blood pressure regulating drugs are used. However, these treatment methods are generally aimed at relieving symptoms, and the clinical picture returns to its previous state in a short time. In these symptomatic treatments, the patient's painkiller or drug threshold gradually increases, migraine attacks continue more severely, and there is a progressive decrease in the quality of life of individuals (1-5). For this reason, migraine is currently seen as a disease that cannot yet be treated with modern medical methods.

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Although there are discussions on the terms alternative and complementary medicine today, the existence of this field is accepted with scientifically published peer-reviewed journals and studies (7-9). In cases where modern medical diagnosis and treatment methods are inadequate, complementary medicine comes into play and provides important contributions in a symptomatic sense, although not for therapeutic purposes. While the concept of alternative medicine replaces one treatment method with another, the concept of complementary medicine includes treatments based on traditional knowledge from the past for health problems that the concept of modern medicine is lacking or cannot find sufficient solutions for (10-12).

In modern medicine, the diagnosis and treatment processes of diseases with known etiology, organ failures, pathological and systemic diseases are also known. However, in diseases with unknown etiology and mechanism such as migraine, complementary medicine methods are used more frequently due to the inadequacy of the treatment process. On the other hand, there were no sufficient studies examining how these methods entered the literature for migraine. Therefore, the aim of the study was to conduct a meta-analysis of the effects of complementary and supportive medicine methods on migraine headaches.

2. Methods

2.1. Research Model

The research was designed in a mixed model using meta-analysis and systematic review methods. In this model, academic databases related to the subject were scanned and the findings were grouped using content analysis methods.

2.2. Data Set

In the study, scientific publications on migraine from Web of Science, Scopus, Medline, Pubmed and refereed academic publications of universities and clinical research results were analyzed. The research data set consisted of secondary data and data were obtained with inferential analysis methods. In this context, a total of 30 studies including migraine and alternative and complementary medicine methods were analyzed (13-42). The distribution of indicators and themes used in the analysis of the data is given in Table 1.

Table 1. Distribution of indicators and themes used in the analysis of data

Scope	Content	Impact Type
Migraine with aura	Ozone	Physiological-acupuncture
Migraine without aura	Alternative medicine	Active substance
All migraine	Complementary medicine	Placebo
Headache	Alternative and complementary medicine	

2.3. Data Analysis

In the analysis of research data, semiotic analysis, document scanning model and meta analysis methods were used from content analysis methods. Maxqda 2024 for Windows package program was used for semiotic analysis methods. Frequency Analysis was performed for nominal distributions of the obtained contents.

3. Results

In the meta-analysis, alternative and complementary treatment methods related to migraine were analyzed in terms of scope, content and effect type by also using systematic review and semiotic analysis methods.

In the studies examined in terms of scope, migraine with aura was examined in more studies than migraine without aura. The rate of studies including all migraines was 23.3%, the rate of migraine with aura was 33.3% and the rate of migraine without aura was 30.0%. The rate of studies including general migraine as a headache was 13.3%, and tension-type headache and migraine were used closely (13-42) (Table 2).

Table 2. Scope indicator themes and frequency analysis results

Indicator	Frequency	Percent (%)
Migraine with aura	10	33.3
Migraine without aura	9	30.0
All migraine	7	23.3
Headache	4	13.3

The distribution of content indicator themes was 26.7% for ozone, 23.2% for alternative medicine and 20.0% for complementary medicine. The proportion of studies that included both alternative and complementary medicine was found to be 30.0% (Table 3).

Table 3. Content indicator themes and frequency analysis results

Indicator	Frequency	Percent (%)
Ozone	8	26.7
Alternative medicine	7	23.3
Complementary medicine	6	20.0
Alternative and complementary medicine	9	30.0

The three subthemes of the effect type indicator were selected as physiological-acupuncture, active substance and placebo. Although physiological effects are associated with hormones, studies that included physical therapy methods such as acupuncture were included. Herbal and traditional foods containing complementary medicine and food supplements were included as active substances, apart from drugs. The placebo effect was selected for the biological effects of physical therapy-like methods, mostly for the effect of migraine. The distribution of effect type indicators according to themes was 26.7% physiological-ozone, 30.0% physiological-acupuncture, 23.3% active substance and 20.0% placebo (Table 4).

Table 4. Impact type indicator themes and frequency analysis results

Indicator	Frequency	Percent (%)
Physiological-ozone	8	26.7
Physiological-acupuncture	9	30.0
Active substance	7	23.3
Placebo	6	20.0

4. Discussion

In this study, the use of alternative and complementary medical treatment methods in the treatment of migraine headache was analyzed. The findings revealed that alternative and complementary medical methods are used extensively in the treatment of migraine and that modern medicine is inadequate in terms of permanent treatment in migraine treatment.

In migraine headaches, unlike other headaches whose underlying cause is known, the treatment process varies greatly (1-3). Therefore, it is possible to state that there are more studies, methods, applications and research in the sciences related to alternative and complementary medicine in the migraine treatment process (4-6). Alternative medicine methods include approaches that claim to be sufficient to treat migraine alone and that fully solve the underlying causes and mechanisms of

migraine (22-26). On the other hand, complementary medicine suggests that modern medical follow-up is also important and should continue in migraine treatment due to the unknown causes of the disease (27-32). In alternative medicine methods, the prevailing idea is that pain reduction treatments provided by painkillers are harmful due to the intake of foreign chemicals into the body and that the use of chemical painkillers is not appropriate for symptomatic pain relief treatment only.

In complementary medicine studies, although there is not much intervention in the treatment or diagnosis processes of modern medicine, in addition to these, some applications are suggested to increase the success of the treatment (30-34). Unlike alternative medicine, complementary medicine does not have a discourse such as replacing or criticizing modern medicine. In fact, it is possible to say that there is a structure that evaluates and directs the information obtained from different fields of modern medicine towards migraine headache. Although complementary medicine has the potential to turn into alternative medicine after a certain stage, there is no more definite and sharp distinction like alternative medicine.

The results we obtained in our research showed that although alternative medicine was the most studied area for migraine headache, there were also studies on complementary medicine. It was 31.82% for alternative medicine and 27.27% for complementary medicine. The rate of studies that included both alternative medicine and complementary medicine was found to be 40.91%. These results we obtained show that alternative medicine methods were much more prominent among both methods. In terms of the agent, according to the results we obtained, 40.91% of the studies were physiological-acupuncture, 31.82% active substance and 27.27% placebo. Therefore, acupuncture and herbal active substance studies are especially prominent in migraine headache today. In order for an active substance or method to be included in the treatment processes in modern medical studies, phase studies and chronological effect studies are needed. In this respect, in order for the effects and results of alternative medicine and complementary medicine methods to be combined with modern medicine, advanced and multidisciplinary studies that address and evaluate these different areas together are needed.

Limitations of the Study

The most important limitation of the study is the limited information on modern medical methods and treatment for migraine. This situation is a significant limitation not only in comparing the results of the study but also in comparing the findings obtained in the study. In the existing studies, there is a predominance of either modern medicine or alternative medical methods.

Another limitation of the study is the differences in discourse and approach between alternative and complementary medicine methods and modern medicine methods regarding migraine. It is seen that the discourses in these two areas are different, from the causes of the disease to its effects, from the treatment processes to the factors related to the disease. This situation constitutes an important limitation in the study.

Contributions of the research to the literature

The most important contribution of the research to the literature is that it is interdisciplinary and deals with different approaches to the same health problem together. The research analyzes studies comparing both modern medical methods and alternative and complementary methods. In this respect, the research can be considered among the pioneering studies in the field in terms of dealing with different disciplines together.

Another important aspect of the study is that it is designed pragmatically, that is, in a utilitarian manner. The main purpose of the study is to provide the highest treatment success and efficiency for migraine, and the relevant publications have been analyzed within this framework. Therefore, the results obtained can also make a positive contribution to the field and clinical practices.

5. Conclusion

In conclusion, although modern medicine cannot provide a permanent and biological solution for migraine type pain, complementary medicine methods and traditional medicine approaches provide much more than just painkillers targeting the symptoms. In treatment methods such as acupuncture, although the mechanisms are not yet fully known, the placebo effect has an important function in the symptomatic treatment of migraine type headache. In this respect, alternative and complementary medicine methods provide effective and efficient results in migraine treatment. However, the number of studies conducted on this subject and the number of patients in the studies are quite limited.

In order to achieve more success in migraine headache, to reveal how much of the success obtained from alternative and complementary medicine methods is placebo, and to combine the results obtained from these with modern medical methods, more clinical and conceptual studies are needed. In this respect, in addition to clinical studies that are both interdisciplinary and examine both medical fields, conceptual and meta-analyses and systematic reviews are needed.

Conflict of Interest and Source of Funding

Authors decelerate no conflicts of interest.

Ethical Statement

Since the nature of the research relies on public data, no ethical approval is applicable and informed consent is not applicable.

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The author funded the research.

Authors' contributions

Authors equally contributed to the research.

Patient consent for publication

Since data are public, no patient consent is applicable.

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References

1. Eigenbrodt, A. K., Ashina, H., Khan, S., Diener, H. C., Mitsikostas, D. D., Sinclair, A. J., ... & Ashina, M. (2021). Diagnosis and management of migraine in ten steps. *Nature Reviews Neurology*, 17(8), 501-514.
2. Bigal, M. E., Serrano, D., Reed, M., & Lipton, R. B. (2008). Chronic migraine in the population: burden, diagnosis, and satisfaction with treatment. *Neurology*, 71(8), 559-566.
3. Silberstein, S. D. (2000). Practice parameter: Evidence-based guidelines for migraine headache (an evidence-based review) Report of the Quality Standards Subcommittee of the American Academy of Neurology. *Neurology*, 55(6), 754-762.
4. May, A., & Schulte, L. H. (2016). Chronic migraine: risk factors, mechanisms and treatment. *Nature Reviews Neurology*, 12(8), 455-464.
5. American Headache Society. (2019). The American Headache Society position statement on integrating new migraine treatments into clinical practice. *Headache: The Journal of Head and Face Pain*, 59(1), 1-18.
6. Ferrari, M. D., Goadsby, P. J., Rami, B., Kurth, T., Cenk, A., Charles, A., ... & Dodick, D. W. (2022). Migraine (Primer). *Nature Reviews: Disease Primers*, 8(1).
7. Holmberg, C., Brinkhaus, B., & Witt, C. (2012). Experts' opinions on terminology for complementary and integrative medicine—a qualitative study with leading experts. *BMC Complementary and Alternative Medicine*, 12, 1-7.
8. Ng, J. Y., Boon, H. S., Thompson, A. K., & Whitehead, C. R. (2016). Making sense of "alternative", "complementary", "unconventional" and "integrative" medicine: exploring the terms and meanings through a textual analysis. *BMC complementary and alternative medicine*, 16, 1-18.
9. Gale, N. (2014). The sociology of traditional, complementary and alternative medicine. *Sociology compass*, 8(6), 805-822.
10. Tilburt, J., Yost, K. J., Lenz, H. J., Zúñiga, M. L., O'Byrne, T., Branda, M. E., ... & Roter, D. L. (2019). A Multicenter Comparison of Complementary and Alternative Medicine (CAM) Discussions in Oncology Care: The Role of Time, Patient-Centeredness, and Practice Context. *The Oncologist*, 24(11), e1180-e1189.
11. Frenkel, M. A., & Borkan, J. M. (2003). An approach for integrating complementary–alternative medicine into primary care. *Family practice*, 20(3), 324-332.
12. Saks, M. (1998). Medicine and complementary medicine. *Modernity, medicine and health*, 19-15.
13. Gilmore, B., & Michael, M. (2011). Treatment of acute migraine headache. *American family physician*, 83(3), 271-280.
14. Cutrer, F. M., & Huerter, K. (2007). Migraine aura. *The neurologist*, 13(3), 118-125.
15. Lucas, C. (2021). Migraine with aura. *Revue neurologique*, 177(7), 779-784.
16. Hansen, J. M., Lipton, R. B., Dodick, D. W., Silberstein, S. D., Saper, J. R., Aurora, S. K., ... & Charles, A. (2012). Migraine headache is present in the aura phase: a prospective study. *Neurology*, 79(20), 2044-2049.
17. Mayans, L., & Walling, A. (2018). Acute migraine headache: treatment strategies. *American family physician*, 97(4), 243-251.
18. Urits, I., Patel, M., Putz, M. E., Monteferrante, N. R., Nguyen, D., An, D., ... & Viswanath, O. (2020). Acupuncture and its role in the treatment of migraine headaches. *Neurology and therapy*, 9, 375-394.
19. Linde, K., Streng, A., Jürgens, S., Hoppe, A., Brinkhaus, B., Witt, C., ... & Melchart, D. (2005). Acupuncture for patients with migraine: a randomized controlled trial. *Jama*, 293(17), 2118-2125.

20. Li, Y., Liang, F., Yang, X., Tian, X., Yan, J., Sun, G., ... & Zou, R. (2009). Acupuncture for treating acute attacks of migraine: a randomized controlled trial. *Headache: The Journal of Head and Face Pain*, 49(6), 805-816.
21. Sun, Y., & Gan, T. J. (2008). Acupuncture for the management of chronic headache: a systematic review. *Anesthesia & Analgesia*, 107(6), 2038-2047.
22. Facco, E., Liguori, A., Petti, F., Zanette, G., Coluzzi, F., De Nardin, M., & Mattia, C. (2008). Traditional acupuncture in migraine: a controlled, randomized study. *Headache: The Journal of Head and Face Pain*, 48(3), 398-407.
23. Li, M., Wang, W., Gao, W., & Yang, D. (2022). Comparison of acupuncture and sham acupuncture in migraine treatment: an overview of systematic reviews. *The Neurologist*, 27(3), 111-118.
24. Jena, S., Witt, C. M., Brinkhaus, B., Wegscheider, K., & Willich, S. N. (2008). Acupuncture in patients with headache. *Cephalalgia*, 28(9), 969-979.
25. Millstine, D., Chen, C. Y., & Bauer, B. (2017). Complementary and integrative medicine in the management of headache. *Bmj*, 357.
26. Mauskop, A. (2012). Nonmedication, alternative, and complementary treatments for migraine. *CONTINUUM: Lifelong Learning in Neurology*, 18(4), 796-806.
27. Posadzki, P., AlBedah, A. M., Khalil, M. M., AlQaed, M. S., Lee, M. S., Ernst, E., & Car, J. (2015). Complementary and alternative medicine for the prevention and treatment of migraine headache: an overview of systematic reviews. *Focus on Alternative and Complementary Therapies*, 20(2), 58-73.
28. Ng, J. Y., & Hanna, C. (2021). Headache and migraine clinical practice guidelines: a systematic review and assessment of complementary and alternative medicine recommendations. *BMC complementary medicine and therapies*, 21, 1-14.
29. Adams, J., Barbery, G., & Lui, C. W. (2013). Complementary and alternative medicine use for headache and migraine: a critical review of the literature. *Headache: The Journal of Head and Face Pain*, 53(3), 459-473.
30. Wells, R. E., Bertisch, S. M., Buettner, C., Phillips, R. S., & McCarthy, E. P. (2011). Complementary and alternative medicine use among adults with migraines/severe headaches. *Headache: The Journal of Head and Face Pain*, 51(7), 1087-1097.
31. Patel, P. S., & Minen, M. T. (2019). Complementary and integrative health treatments for migraine. *Journal of neuro-ophthalmology*, 39(3), 360-369.
32. Gantenbein, A. R., Afra, J., Jenni, W., & Sándor, P. S. (2012). Complementary and alternative treatments for migraine. *Techniques in regional anesthesia and pain management*, 16(1), 76-81.
33. Kemper, K. J., & Breuner, C. C. (2010). Complementary, holistic, and integrative medicine: headaches. *Pediatrics in review*, 31(2), e17-e23.
34. Mauskop, A. (2007). Complementary and alternative treatments for migraine. *Drug Development Research*, 68(7), 424-427.
35. Kotov, S. A. (2000). Ozone therapy of migraine. *Zhurnal Nevrologii i Psikhatrii Imeni SS Korsakova*, 100(11), 35-37.
36. Apuzzo, D., & Ferrazza, P. (2016). Case reports on patients with migraine responding to ozone therapy. *J Pain Relief*, 5(252), 2167-0846.
37. Clavo, B., Santana-Rodriguez, N., Gutierrez, D., Lopez, J. C., Suarez, G., Lopez, L., ... & Bocci, V. (2013). Long-term improvement in refractory headache following ozone therapy. *The Journal of Alternative and Complementary Medicine*, 19(5), 453-458.
38. Altman, N. (2007). Ozone therapy: a solution to the opioid epidemic. *The oxygen prescription. Miracle of oxidative therapies*.
39. Doğan, M., Özdemir Doğan, D., Düger, C., Özdemir Kol, İ., Akpınar, A., Mutaf, B., & Akar, T. (2014). Effects of high-frequency bio-oxidative ozone therapy in temporomandibular disorder-related pain. *Medical principles and practice*, 23(6), 507-510.
40. Akçali, D., & Babacan, A. (2019). The potential role of Ozone Therapy. *Peripheral Interventional Management in Headache*, 109-114.
41. Küçükceran, H., Alp, H., & Ağadayı, E. (2021). Therapies Used in a Traditional and Complementary Medicine Outpatient Clinic: A Three-Year Experience. *Journal of Traditional Medical Complementary Therapies*, 4(2).
42. Rakovsky, S., & Zaikov, G. (2009). Application of ozone in medicine.