



The Assessment of Efficiency of Traditional and Complementary Medicine Practices in Neurology

Nörolojide Geleneksel ve Tamamlayıcı Tıp Uygulamalarının Etkinliğinin Değerlendirilmesi

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Abstract

Traditional, complementary, and alternative medicine practices are used in the prevention, diagnosis, and treatment of a wide variety of diseases in the world. Such practices in Turkey are regulated by the "Regulation of Traditional and Complementary Medicine Practice" issued by the Ministry of Health in the Official Gazette of the Republic of Turkey (Issue: 29158, 27th October 2014). The appendix of this regulation defines 15 practices that can be applied in units and practice centers. These applications include; 1. Acupuncture, 2. Apitherapy, 3. Phytotherapy, 4. Hypnosis, 5. Leech therapy (Hirudotherapy), 6. Homeopathy, 7. Chiropractic, 8. Cupping, 9. Maggot therapy, 10. Mesotherapy, 11. Proloterapy, 12. Osteopathy, 13. Ozone therapy, 14. Reflexology, and 15. Music therapy. In this review, the indications of these 15 applications in the field of neurology are examined and current opinions of the evidence-based medical data are summarized.

Keywords: Acupuncture, alternative medicine, complementary medicine, mesotherapy, phytotherapy, traditional medicine

Öz

Geleneksel, tamamlayıcı ve alternatif tıp uygulamaları, dünyada çok çeşitli hastalıkların önlenmesinde, tanısında ve tedavisinde kullanılmaktadır. Günümüzde, Türkiye'de geleneksel, tamamlayıcı ve alternatif tıp uygulamaları, Sağlık Bakanlığı tarafından 27.10.2014 tarihli 29158 sayılı Resmî Gazete'de yayınlanan "Geleneksel ve Tamamlayıcı Tıp Yönetmeliği" ile düzenlenmektedir. Bu yönetmeliğin eklerinde ünite ve uygulama merkezlerinde yapılabilecek 15 uygulama tanımlanmıştır. Bu uygulamalar; 1. Akupunktur, 2. Apiterapi, 3. Fitoterapi, 4. Hipnoz, 5. Sülük tedavisi (Hirudoterapi), 6. Homeopati, 7. Kayropratik tedavi, 8. Kupa tedavisi, 9. Larva tedavisi, 10. Mezoterapi, 11. Proloterapi, 12. Osteopati, 13. Ozon terapisi, 14. Refleksoloji, 15. Müzik terapidir. Bu derlemede, bu 15 uygulamanın nöroloji alanında endikasyonları incelenmiş ve kanıta dayalı tıp verileri ile ilgili görüşler özetlenmiştir.

Anahtar Kelimeler: Akupunktur, alternatif tıp, tamamlayıcı tıp, mezoterapi, fitoterapi, geleneksel tıp

Introduction

Traditional, complementary, and alternative medicine practices are widely used in the prevention, diagnosis, and treatment of a wide variety of diseases in the world. According to the World Health Organization reviews, the most common traditional practices are Chinese medicine practices, especially acupuncture. According to countries worldwide, approaches to traditional and complementary medicine practices vary widely (1). Such practices in Turkey are regulated by the "Regulation of Traditional and Complementary Medicine Practice" issued by the Ministry of

Health in the Official Gazette of the Republic of Turkey (Issue: 29158, 27th October 2014). The purpose of this regulation is, "to determine traditional and complementary medicine practice methods for human health, to educate and empower those who will apply these methods, and to regulate the working procedures and principles of the health institutions in which these methods will be implemented". The appendix of this regulation defines 15 applications that can be performed in units and practice centers. These applications include; 1. Acupuncture, 2. Apitherapy, 3. Phytotherapy, 4. Hypnosis, 5. Leech therapy (Hirudotherapy), 6. Homeopathy, 7. Chiropractic, 8. Cupping, 9. Maggot therapy, 10.

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Received/Geliş Tarihi: 30.05.2017 **Accepted/Kabul Tarihi:** 31.07.2017

This review was prepared by members of the Turkish Neurological Society Working Group of Young Neurologists upon the recommendation of the Board of Directors of the Turkish Neurological Association and published with the approval of the Board of Directors.

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Turkish Journal of Neurology published by Galenos Publishing House.

Mesotherapy, 11. Prolotherapy, 12. Osteopathy, 13. Ozone therapy, 14. Reflexology, and 15. Music therapy (2).

Within the scope of the “Conventional and Complementary Medicine Practices Workshop” organized by Turkish Medical Association-UDEK on December 12th, 2015, the Turkish Neurological Society commissioned the Working Group of Young Neurologists and conducted a study on the scientific methodology of 15 methods that are legalized in our country. The indications of applications in the field of neurology were examined; the PubMed and Cochrane library were scanned from past to present, and the current opinions on the evidence-based medical data are summarized below.

Acupuncture

Acupuncture is an application made by stimulating specially designated areas of the body with a needle. It is currently among the most commonly used complementary therapies in the world. The first regulation on the application of acupuncture, which has been used for many years in Turkey, entered into force in 1991 and was regulated in 2002 (3,4,5). Since 2014, regulations on acupuncture applications have been evaluated under the “Regulation of Traditional and Complementary Medicine Practices”. In the Regulation of Traditional and Complementary Medicine Practices, the neurologic conditions in which acupuncture can be performed are defined as “migraine, tension-type and other non-organic headaches, neuropathic pain, increasing quality of life in amnesia and memory problems, and muscle contractures or weakness in stroke-related partial paralysis” (2).

Evidence in a recent Cochrane review on migraine prophylaxis suggests that acupuncture provides additional benefit to acute migraine attack treatment or routine treatment. However, acupuncture per se has not been proven superior to “sham”. Current studies suggest that it is at least as effective as prophylactic drug therapy and even more effective, and that it can be evaluated as a treatment option in willing patients (6).

Acupuncture support in tension-type headache was found to be inadequate in previous studies. However, with recently added studies, it was recognized as a useful, non-pharmacologic agent in episodic and chronic stress-type headaches in the Cochrane review (7). Acupuncture was found to be effective in meta-analyses where acupuncture was compared with 'sham' and “non-sham” controls in chronic pain (headache, migraine, osteoarthritis, back, neck, shoulder pain). Acupuncture has been advocated as a much more effective treatment than placebo (8). A systematic review protocol was established to investigate the effect of acupuncture in Alzheimer’s disease (9). In this review, it was concluded that acupuncture improved cognitive functions, that it might be more effective than drugs in improving the ability of patients to maintain their daily lives, and that it might also increase the efficacy of given drugs (10). The effect of acupuncture in vascular dementia seems uncertain. A good assessment cannot be made due to the absence of randomized, placebo-controlled studies (11). Acupuncture was found to be safe in a Cochrane review about its effects on stroke, but no definitive evidence was found (12). Some meta-analyses have shown that acupuncture seems to be superior to non-acupuncture treatments or conventional treatments in cerebral

infarctions, but that large and methodologically robust studies are needed (13,14). Current evidence suggests that it may be effective in treating neurological dysfunctions such as post-stroke dysphagia, but that these should also be supported by large studies. On the other hand, there is no evidence that it prevents post-stroke mortality and disability, or improves motor dysfunction (15).

There are no indications for acupuncture in epilepsy in the Regulation and acupuncture is not recommended at all in studies on epilepsy treatment (16). The evidence-based medical data related to acupuncture applications in the cases specified in the Regulation generally concluded that there was a requirement for well-planned large studies.

Apitherapy

Apitherapy is an alternative medicine application involving the therapeutic use of bee products (honey, propolis, pollen, royal jelly, beeswax, and especially bee venom). Depending on the disease being treated, it can be applied in the form of cream, ointment, live injection, acupuncture or direct regional bee sting. The most commonly used form is injection of diluted bee venom into the acupuncture points. One of the main biologic activities of bee venom has been shown to be the inhibition of inflammatory and nociceptive responses; therefore, it is used in the treatment of inflammatory diseases such as arthritis, bursitis, tendinitis, rheumatoid arthritis, Lyme disease, and wound care due to this inhibition. There is no direct neurologic indication for apitherapy in the Regulation of Traditional and Complementary Medicine Practices. Although there are pilot studies and case reports in the literature claiming that the use of bee venom in post-stroke central pain may be beneficial, there is no comprehensive study or Cochrane review on this subject (17,18). In a study investigating the effect of bee venom on attack frequency and quality of life in patients with multiple sclerosis (MS), treatment was also found to be ineffective (19). In addition, previously described neurologic complications of bee poisoning include optic neuritis; pontine hemorrhages, albeit rarely; hypoxic brain damage; MS attacks; hemorrhagic vasculitis; and multiple thalamic and mesencephalic hemorrhages following multiple bee sting treatment have been reported (20).

Both animal experiments and clinical studies have been conducted on the use of bee venom in neurodegenerative diseases (Alzheimer’s disease, Parkinson’s disease, epilepsy, MS, amyotrophic lateral sclerosis) because bee venom and other components are well-known neuroprotector and neuromodulator sources. Although apitherapy has been thought to be useful in neurodegenerative diseases due to its neuroprotective effects in a recent study, it has been stated that apitherapy is a neuropsychological approach and that new studies have to be conducted in order to understand the mechanism of action (21).

Phytotherapy

This is a traditional method involving the therapeutic use of various herbs and extracts. Herbal treatments are widely used, especially in China, and there are Cochrane reviews on the efficacy and safety of some of these.

Chinese plants such as *Acanthopanax*, *Mailuoning*, *Sanchi*, *Gingko biloba*, which are commonly used in China, have been suggested to be effective in the treatment of acute ischemic stroke, and their efficacy and safety in treatment have been investigated individually in Cochrane reviews. It has been pointed out in all reviews that the methodology, sample size, and quality of the studies do not enable these treatments to be considered effective and reliable treatments and that well-planned, randomized, controlled studies with large series are required (22,23,24,25).

There are also a number of studies suggesting that some commonly used Chinese plants are effective on cognition, and the efficacy and safety of *Yizhi* capsule and *Zhiling* decoction on vascular dementia, and *Gingko biloba* and *ginseng* on cognitive impairment and dementia have been investigated in Cochrane reviews. In addition, the herbal treatments suggested to be effective on cognition other than *Gingko biloba* were also collectively evaluated in a Cochrane review. It has been noted that investigated studies are generally methodologically weak, small-sampled, bias-risked studies, that no valid evidence has been found for efficacy and safety for any of the aforementioned plants, and that randomized, double-blind, placebo-controlled studies on large groups are needed (26,27,28,29,30). In a Cochrane review on *Gingko biloba* medications that are frequently prescribed with cognitive impairment and dementia diagnosis in our country, it is noteworthy how the evidence regarding the its clinically significant benefit in patients with dementia or cognitive impairment is interpreted inconsistently and unreasonably.

Chrysanthemum is a plant recommended for use in the prophylaxis of migraine attacks in different studies. In a Cochrane review, positive evidence was provided for the efficacy and safety of *chrysanthemum* in migraine prophylaxis (with the addition of a recent large study demonstrating a reduction of 0.6 per month in migraine frequency between *chrysanthemum* and placebo). However, it has been noted that larger, better quality studies with better defined populations of migraine and stabilized doses of *chrysanthemum* are needed (31).

Hypnosis

A Cochrane review stating a neurologic indication of hypnosis, which is common in anxiety disorders and a variety of painful conditions, has not been found. In a review of the use of hypnosis in chronic pain, it was suggested that the responses to hypnosis were very variable, and that the available evidence suggests that hypnosis reduces daily pain and benefits other pain-related conditions. It was noted that hypnosis had synergistic effects with other psychological and physical treatments, and that further studies were needed to understand the mechanism of hypnotic analgesia and to create experimental bases to make hypnotic treatments more effective (32).

Leech Therapy (Hirudotherapy)

These are therapies involving medicinal leeches for therapeutic use, and the anti-inflammatory and analgesic effects of active substances released during leech bites are mentioned. Although no neurologic indication is specified for hirudotherapy in the Regulation of Traditional and Complementary Medicine Practice,

it has been tested in various neurologic diseases. There is no Cochrane review of the use of hirudotherapy in neurologic diseases in the literature, and no neurologic indication has been found in a review of the clinical use of hirudotherapy (33).

Homeopathy

Homeopathy is an alternative medicine method based on the belief that disease can be treated by administering substances to the patient at very low doses, which can produce symptoms of the disease in a healthy person. Since the substance is diluted many times, it is generally thought that the obtained drug may not have active molecules.

Regulation of Traditional and Complementary Medicine Practice states that homeopathy is made with personalized homeopathic medicines and that the neurologic indications are “non-organic headaches such as migraine and tension headache” and “nerve root irritations”. However, no Cochrane review has been found in the literature to support these indications. A meta-analysis of publications on the use of homeopathy in the treatment of migraine and other headaches concluded that the current literature is not qualitatively and quantitatively reliable, and there was no clear evidence that homeopathy was superior to placebo in the treatment of migraine and other headaches (34).

Publications on the use of homeopathy in dementia treatment were planned to be reviewed with a Cochrane review, but it was not possible to comment on its use in this case because there were no publications that met the required criteria (randomized controlled trial with more than 20 patients) and there was no relevant evidence. Moreover, because the scope of homeopathy in dementia is unclear, it has been stated that it is difficult to comment on the importance of the studies conducted (35).

Chiropractic

Chiropractic aims to treat biomechanical problems of the musculoskeletal system through manual manipulation of joints with impaired mechanical mobility. In a Cochrane review of the effects of combined chiropractic treatment on low back pain, it has been stated that these treatments reduce pain and disability in the short term in patients with acute/subacute low back pain, and reduce pain moderately in the medium term. However, there is no evidence yet that there is a clinically significant difference in pain or disability in patients with low back pain compared with other therapies (36).

In a Cochrane study of spinal manipulative treatment of acute low back pain, it was concluded that this treatment was not more effective than “sham” treatment when applied alone or in combination with other treatments in patients with acute low back pain, suggesting that it does not seem to be better than the current recommended treatments. It has also been indicated that the decision to guide patients to this treatment should be based on criteria such as price, patient preference, and safety compared with other treatments (37).

In a Cochrane review evaluating the efficacy of methods other than surgery and steroid injection in the treatment of Carpal Tunnel syndrome, it was shown that oral steroids, splint, ultrasound, yoga, and mobilization of carpal bones were beneficial in the short

term and that chiropractic treatment (e.g., laser, exercise) did not provide any benefit over the placebo or control group (38).

Cupping

The method based on creating a regional vacuum in order to increase blood circulation is called dry cup therapy. The method of applying local vacuum at certain body points and creating superficial skin cuts in order to prevent and treat some diseases is called wet cup therapy (hijama). No Cochrane review or meta-analysis of a neurologic indication for cupping is available.

Maggot Therapy

Maggot therapy has been specifically investigated for use in venous leg ulcers and diabetic ulcers.

There is no specific case use in neurology. However, in bed-dependent patients, it was used as a treatment option for necrotic debridement in pressure ulcers. In a Cochrane review of venous leg ulcers, it was suggested that it might be useful for debridement, but that larger studies were needed (39).

Mesotherapy

This is a method that requires injection of some chemical and/or herbal mixtures into the middle layer of the skin with needles. When the use of this method, which is frequently applied in the field of dermocosmetics, was investigated in terms of neurologic diseases, it is seen that the scientific data are rather inadequate and limited. There is no randomized placebo-controlled studies in the literature with the keywords “migraine pain,” “trigeminal neuralgia and cervicobrachial neuralgia”, and “myofascial pain syndromes,” which are stated to be the areas of mesotherapy use. There is also no Cochrane review. For this reason, there are no scientific data on the use of mesotherapy in the indicated indications. Infections seen in patients treated with mesotherapy are a serious health problem (40,41,42,43).

Prolotherapy

Prolotherapy treatment is based on the principle of injection of proliferative and irritant solutions (often dextrose and lidocaine) into the body. It is claimed to be an adjunctive treatment method for muscle and joint pain. In a Cochrane review on its use in chronic back and lower back pain in 2008, it was reported that prolotherapy was not effective on its own and offered some benefit in combination with spinal manipulations, exercise and other methods. However, because of the heterogeneity of clinical trials and the presence of other concurrent treatment modalities, it was stated that it was not possible to draw definitive conclusions (44). The “American Pain Society” does not mention prolotherapy in the guidelines (45).

There are no scientific data or studies on the use of prolotherapy in migraine and other headaches.

Osteopathy

Osteopathic manipulations are manual applications involving the musculoskeletal system. A meta-analysis in 2014 on the use

of osteopathic manipulations in chronic back and lower back pain stated that they might have a pain-reducing effect in chronic back pain, but that randomized controlled trials were needed for definitive data in this regard (46). There is no Cochrane review on this subject.

In a recent three-arm randomized, placebo-controlled study on the use of osteopathy in migraine in 105 patients, it was shown that osteopathy and medical treatment reduced both the amount of pain and drug use significantly compared with the combination of “sham” and medical treatment and medical treatment alone (47). Smaller studies are available for tension-type headaches, and although positive effects are reported, larger studies are needed (48).

Studies on the use of osteopathic manipulations in Alzheimer’s disease, MS, Parkinson’s disease, postural and balance disorders, and pain syndromes are usually observational cross-sectional and case studies. It is not possible to draw conclusions from meta-analyses involving randomized controlled trials due to methodologic differences (49).

Ozone Therapy

There is no qualitative meta-analysis or Cochrane review of the use of ozone therapy in neurologic diseases. It was stated in a meta-analysis that it might be useful in chronic low back pain. However, the fact that there are no placebo-controlled studies, no definite diagnosis of patients, and the combined use of multiple treatment agents makes it difficult to draw conclusions from the meta-analysis of these studies (50).

There are case-by-case reports of ozone therapy in specific conditions such as brain ischemia and radiation-related brain injury (51). However, it is not possible to draw conclusions from the case reports.

The reported number of cases regarding the use of ozone treatment in headache is also very low and no randomized controlled trials are available in the literature. There is a study in five patients stating that ozone therapy was useful in headache (52). However, it is not possible to make a proposal by evaluating the low quality scientific data. Furthermore, vertebrobasilar system stroke and sudden death after ozone therapy in the literature show possible complications and the seriousness of the condition (53,54,55).

Reflexology

In reflexology, pressure is applied to specific points in hand, sole and ears. In a Cochrane review in 2006 on the use of reflexology to reduce anxiety, agitation, behavioral problems, and cognitive loss in patients with dementia, it was found that the benefits of massage applications were quite small and that this was not enough to establish a general conclusion. However, it was also stated that there were no adverse effects (56). A meta-analysis that evaluated studies of MS, headache, chronic pain, and dementia, of the efficacy of reflexology indicated that there was no evidence to suggest that this was an effective method (57).

Music Therapy

It has been noted in a Cochrane review that there is not enough evidence for or against the use of music therapy in dementia and this was updated in 2010 (58).

A Cochrane review in 2010 on the use of music therapy in acquired brain injury suggested that there were promising results and that it might be useful for gait problems in patients with stroke but larger, randomized, controlled trials were needed to determine its effect on other factors (59).

Conclusion

Traditional, complementary and alternative medicine practices are widely used in the prevention, diagnosis, and treatment of a wide variety of diseases around the world. The important point in this case is to ensure the safety of the health service. Safety, efficacy, and quality control standards for herbal products and complementary therapies should be established and approved. Practitioners must be competent for the practices, and these practices should be legal (1).

Traditional and complementary medicine practices in our country are defined by the "Regulation of Traditional and Complementary Medicine Practice", which was put into effect in 2014, and aims, content and legal limits are defined. Practitioners have been identified as certified physicians and dentists (60). Certified physicians should have detailed knowledge of procedures and complications of procedures. These practices should be known by the medical practitioner following the patient and should not interfere with medical or surgical treatment. Evidence-based medical data on use in neurologic disorders varies between practices. As an example, acupuncture is an application that has been issued since 1991 and has been widely used under the supervision of the Ministry of Health, with certified centers and programs. For this reason, more scientific data on acupuncture is present, but further research, clinical trials and studies are still needed for all applications.

Ethics

Peer-review: Externally and internally peer-reviewed.

Authorship Contributions

Concept: H.Z.B.Ç., E.E.A., S.K., Design: H.Z.B.Ç., E.E.A., S.K., Data Collection or Processing: H.Z.B.Ç., E.E.A., S.K., Analysis or Interpretation: H.Z.B.Ç., E.E.A., S.K., Literature Search: H.Z.B.Ç., E.E.A., S.K., Writing: H.Z.B.Ç., E.E.A., S.K.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

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