



Research Progress on Long-term Effect and Safety of Acupuncture and Moxibustion in Treating Chronic Headache

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Abstract: This article focuses on the long-term effect and safety of acupuncture and moxibustion in the treatment of chronic headache, pointing out that it has the advantages of continuous remission and prevention of recurrence in the long-term effect, high safety and good patient compliance. The current research has design limitations, such as a short follow-up period, difficulty in implementing blinding methods, and a contradiction between standardization and individualization in clinical practice. To this end, optimization strategies are proposed, including extending the observation period in methodology, innovating control designs, developing stratified diagnosis and treatment guidelines in clinical practice, and integrating modern technologies. The study provides a reference for improving the effect and safety of acupuncture and moxibustion in the treatment of chronic headache, and promotes better clinical application.

Keywords: acupuncture and moxibustion treatment; chronic headache; long term effects; safety

1. Introduction

Chronic headache, as a common condition, seriously affects the quality of life and socio-economic development of patients[1]. As a traditional Chinese medicine therapy, acupuncture and moxibustion has shown its unique value in the treatment of chronic headache, and its long-term efficacy and safety have attracted much attention. On the one hand, acupuncture and moxibustion can achieve continuous analgesia and prevent recurrence by regulating the neural endocrine immune network, with mild adverse reactions and high patient acceptance; On the other hand, there are many problems in current research and practice, such as limitations in research design and contradictions between standardization and individualization. Based on this, it is of great practical significance to explore the optimization strategy to improve the efficacy and safety of acupuncture and moxibustion in the treatment of chronic headache.

2. Long term therapeutic value and clinical significance of acupuncture and moxibustion in the treatment of chronic headache

2.1 Long term therapeutic advantages of acupuncture and moxibustion

Acupuncture and moxibustion shows unique therapeutic value and significant clinical significance for long-term treatment of chronic headache[2]. In terms of long-term therapeutic advantages, acupuncture and moxibustion has an obvious continuous remission mechanism, and plays an important role by precisely regulating the neural endocrine immune network. Studies have proved that acupuncture and moxibustion can stimulate the release of endogenous opioid peptides, activate the endogenous opioid system, and produce strong analgesic effects; At the same time, it can regulate the levels of neurotransmitters such as serotonin in the brain, improve nerve conduction function, and achieve long-term pain relief from a biological perspective. In addition, acupuncture and moxibustion also has a significant effect on the prevention and treatment of recurrent chronic headache. Different from the control of symptoms by drugs in the short term, many clinical research data show that the number of headache attacks in patients who have been treated with acupuncture and moxibustion regularly for a long time is significantly reduced. This fully reflects the acupuncture and moxibustion "prevention of disease" idea. When managing chronic diseases, it can not only effectively control the current disease, but also prevent the recurrence of disease, improve the quality of life of patients and reduce the consumption of medical resources. It has significant clinical promotion value.

2.2 Safety and patient compliance

The advantages of acupuncture and moxibustion in safety and patient compliance during long-term use of chronic headache further demonstrate the unique value and significant clinical significance of this therapy. From the perspective of safety, the adverse reactions of acupuncture and moxibustion treatment are extremely mild and highly reversible. Generally,

if there is local subcutaneous blood stasis after surgery, it can subside without special treatment without causing long-term damage to the patient's body. On the contrary, in the process of using Western medicine to treat chronic headaches, prolonged medication may lead to serious side effects such as excessive use of drugs causing headaches and MOH, which not only increases the patient's pain, but also increases the difficulty of treatment and medical costs. The results of a multicenter study from the perspective of patient compliance clearly indicate that the acceptance of non pharmacological therapies by chronic headache patients is increasing year by year. As a traditional non drug therapy, acupuncture and moxibustion, with its high safety and no side effects of drugs, meets the multiple needs of patients for health treatment, and has become the preferred alternative for most patients, playing an irreplaceable role in long-term management of chronic headache[3].

3. Current core problems and challenges of acupuncture and moxibustion in treating chronic headache

3.1 Limitations of research design

At present, the research level of acupuncture and moxibustion treatment of chronic headache faces many core problems and challenges, among which the limitations of research design are particularly obvious. With regard to the follow-up period, most RCT follow-up periods in randomized controlled trials are mainly between 3-6 months, which makes it difficult to obtain long-term effect tracking data of acupuncture and moxibustion treatment for more than 3 years. In this way, important information such as the stability of long-term efficacy and long-term recurrence rate of acupuncture and moxibustion will be lost, which is not conducive to the comprehensive evaluation of its clinical value. At the same time, the implementation of blind law is also difficult. Due to the uniqueness of acupuncture and moxibustion operation, the design of the sham acupuncture and moxibustion control group is very controversial, and it is difficult to achieve a completely blind method. In addition, the placebo effect may be more significant in the process of acupuncture and moxibustion treatment, which will interfere with the interpretation of the research results, making it difficult to accurately distinguish the real efficacy of acupuncture and moxibustion and the placebo effect, and limiting the research quality of acupuncture and moxibustion treatment of chronic headache.

3.2 The contradiction between standardization and individualization

In the process of acupuncture and moxibustion treatment of chronic headache, the contradiction between standardization and individualization has become one of the central problems and difficulties at present. In terms of acupoint selection schemes, there are significant differences in clinical applications between different schools of thought, such as traditional meridian acupoint selection and modern neuroanatomical acupoint selection, and their effects on therapeutic efficacy are also different. However, there is still no unified standard, which leads to a lack of standardized guidelines for clinical treatment and affects the stability and reproducibility of therapeutic effects. At the same time, patient heterogeneity also plays an undeniable role in treatment efficacy. Different subtypes of migraine, such as migraine and tension type headache, as well as their manifestations in different stages of the course of disease, will have a certain regulatory effect on the response rate of acupuncture and moxibustion. Without accurate typing, it is difficult to achieve individualization, which restricts the further improvement of acupuncture and moxibustion in the treatment of chronic headache, highlighting the urgency and necessity of accurate typing.

4. Optimization strategy for improving the efficacy and safety of acupuncture and moxibustion in treating chronic headache

4.1 Improvement direction of methodology

In order to improve the efficacy and safety of acupuncture and moxibustion in the treatment of chronic headache, methodological improvements are needed. On the one hand, we need to increase the observation period. The present invention can construct a multi center prospective queue and, with the assistance of mobile medical technology, enable patients to record headache diaries in real time and achieve long-term dynamic evaluation of headaches. In this way, more detailed long-term treatment effect data can be obtained, and changes in long-term benefits and safety of acupuncture and moxibustion treatment can be accurately evaluated. On the other hand, it innovated the control design, introduced a "to be listed" or "non-invasive pseudo acupuncture and moxibustion" model, and combined it with the detection methods of brain functional connectivity and other biomarkers. This is conducive to reducing the influence of placebo effect and other interference factors, improving the objectivity and reliability of research conclusions, providing more scientific and accurate evidence for the treatment of chronic headache with acupuncture and moxibustion, and promoting the optimal application

of this treatment in clinical practice.

4.2 Clinical practice optimization pathway

It is critical to optimize the path of clinical practice in the process of promoting the efficacy and safety of acupuncture and moxibustion in the treatment of chronic headache[4]. The establishment of hierarchical diagnosis and treatment guidelines is a key measure, which needs to fully consider the types of headache and the status of comorbidity, such as anxiety and depression, and build a ladder type acupuncture and moxibustion intervention program accordingly. In the acute stage of the disease, acupuncture and moxibustion and western medicine can be used together, and the advantages of both can be used to quickly alleviate the disease; When entering the remission period, acupuncture and moxibustion treatment will be strengthened to consolidate the curative effect and prevent recurrence, so as to achieve precise and personalized treatment. At the same time, the integration of modern technology can bring new vitality to acupuncture and moxibustion treatment. We are actively studying the synergistic effect between transcutaneous electrical nerve stimulation (TENS) and manual acupuncture, which will improve the analgesic effect. In addition, AI algorithm is used to predict the best individual stimulus parameters, which can formulate the most appropriate treatment plan according to the specific situation of the patient, improve the scientificity and efficacy, and comprehensively improve the clinical effect and safety of acupuncture and moxibustion in treating chronic headache.

5. Conclusions

Acupuncture and moxibustion has significant long-term efficacy and good safety in the treatment of chronic headache, but its advantages are not fully demonstrated due to the constraints of research design and clinical practice. By improving methodology, extending observation periods, and innovating control designs, more scientific and accurate research data can be obtained; Optimizing clinical practice, developing tiered diagnosis and treatment guidelines, and integrating modern technology can achieve precise personalized treatment. In the future, it is necessary to further deepen research and practical exploration, constantly improve the optimization strategy, improve the overall level of acupuncture and moxibustion treatment of chronic headache, provide patients with more high-quality and effective treatment programs, and promote the extensive application and development of acupuncture and moxibustion in the field of chronic headache treatment[5].

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