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Traditional Chinese Medicine for Acute Migraine: A Systematic Review and Meta-Analysis

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Abstract

Objectives: A meta-analysis of traditional Chinese medicine in the treatment of acute migraine was conducted to obtain a consistent evaluation of its efficacy. ***Methods:*** The search databases were China National Knowledge Infrastructure (CNKI), Wanfang, VIP, Chinese Biomedical Literature Database (CBM) and PubMed. The publication time of randomized controlled studies (RCT) documents is limited to before June 30, 2023. ***Results:*** Data from 399 patients from 5 RCTs were included. Compared with Western medicine, Traditional Chinese medicine has a higher efficacy ([*RR*=0.81, 95%CI (0.75, 0.89), *P*<0.00001]), a lower adverse reaction rate ([*RR*=1.37, 95%CI (0.74, 2.54), *P*=0.32]) and an improved VAS ([*MD*=-1.37, 95%CI (-2.00, -0.75), *P*<0.00001]). ***Conclusion:*** Traditional Chinese medicine in the treatment of acute migraine can enhance clinical efficacy, reduce treatment side effects, and improve patients' visual analogue score.

Keywords: traditional Chinese medicine, acute migraine, systematic review, meta-analysis

1. Introduction

Migraine is the most common type of primary headache in clinical practice, with moderate to severe, pulsating headaches as the main clinical manifestations. In the acute phase, migraine can seriously impair the patient's quality of work and life, affecting social and occupational abilities (Minen MT, Zhou K & Miller L, 2020). Therefore, it is crucial to terminate acute migraine promptly. Clinical research on traditional Chinese medicine (TCM) and its combined treatment for acute migraine is very extensive. However, there are few reports on the consistent evaluation of its efficacy in the treatment of acute migraine. Therefore, this study conducted a systematic review of randomized controlled trials (RCTs) of traditional Chinese medicine and its combined treatment in the treatment of acute migraine through meta-analysis to provide clinical application guidance.

2. Methods

2.1 Search Methods for the Identification of Studies

This study was mainly searched in CNKI, CBM,

VIP, Wanfang, PubMed and other databases. The RCT literature was published before June 30, 2023. The specific search terms include "migraine", "acute", "Traditional Chinese medicine" and "random".

2.2 Inclusion Criteria

(1) Inclusion subjects: The subjects included in the study should meet one of the diagnostic criteria for acute migraine such as "Chinese Migraine Diagnosis and Treatment Guidelines" and "Guiding Principles for Clinical Research of New Traditional Chinese Medicines". There are no restrictions on nationality, gender and age. (2) Intervention measures: The control group only used conventional Western medicine for symptomatic treatment, such as rizatriptan benzoate, escitalopram, etc. While the experimental group used traditional Chinese medicine or its combination for treatment. (3) Outcome indicators: The main outcome indicators of this study include efficacy, adverse reaction rate and visual analogue score (VAS).

2.3 Statistics Analysis

Data statistical analysis was performed through Review Manager 5.3 software. I^2 was used to evaluate the heterogeneity between the results of each study. If $I^2 \leq 50\%$, the fixed model was used for analysis. If $I^2 > 50\%$, the random model was used for analysis. $P < 0.05$ indicates that the difference is statistically significant.

3. Results

3.1 Literature Search Results

A total of 83 relevant documents were initially included. Finally, 5 literature studies were included, involving a total of 399 patients, as shown in Figure 1.

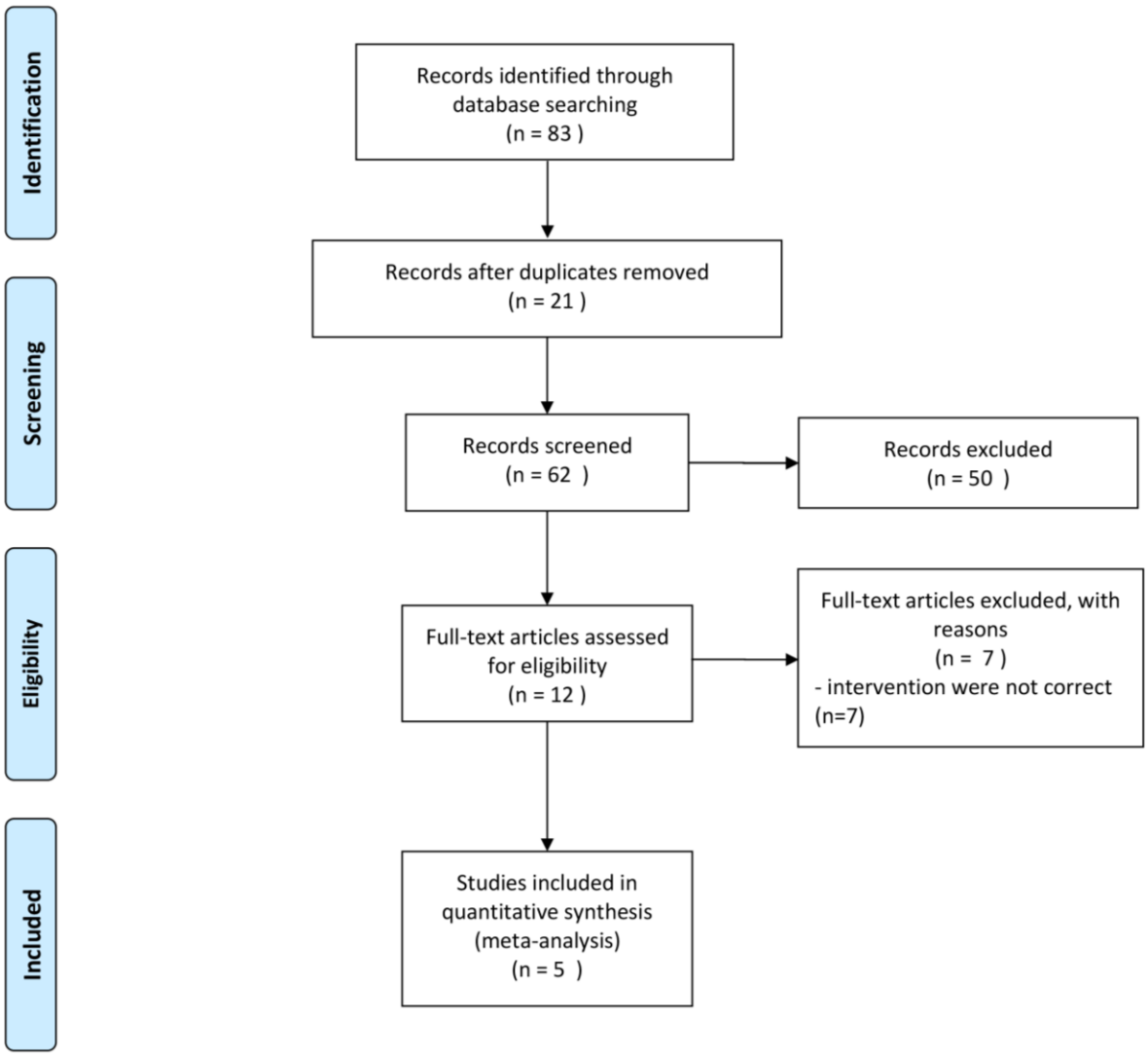

Figure 1. PRISMA flow diagram

3.2 Included Literature Characteristics

A total of 5 articles were finally included in the study (Zhang Y., 2019; Pan Y & Chen Q., 2017; Dong YX., 2019; Bai HB., 2017; Shen XY, Zhang L, Li X, et al., 2022). It included 399 clinical trial patients, as shown in Table 1.

Table 1. Summary of the feature in included studies

Trial/Year	Sample size (Men/Women)	Mean Age or Age Range	Event Trial	Trial Group	Control Group	Other Outcomes
Zhang Y (2019)	Tri:40(10/30) Con:41(9/32)	Tri: 31.7±9.1 Con: 31.85±9.69	40/36	Bloodletting + Cupping	Rizatriptan benzoate	VAS
Pan Y (2017)	Tri:60(22/38) Con:60(24/36)	Tri:40.1 Con:39.6	60/56	Qufeng and Tongluo traditional Chinese medicine + scalp acupuncture + escitalopram	Escitalopram	Adverse reaction/ VAS
Dong YX (2019)	Tri:20(7/13) Con:20(8/12)	Tri: 72.3±10.7 Con: 74.7±12.5	20/19	Biantong patch + rizatriptan benzoate	Rizatriptan benzoate	Adverse reaction
Bai HB (2017)	Tri:31(14/17) Con:31(13/18)	Tri:58.99±9.85 Con:57.03±10.27	31/29	Acupuncture + Gastrodia Atractylodes Decoction	Flunarizine hydrochloride	Adverse reaction/ VAS
Shen XY (2022)	Tri:48(20/28) Con:48(22/26)	Tri:51.84±9.76 Con:51.21±9.47	48/46	Self-prepared prescription for dispelling wind, reducing phlegm and relieving pain + zolmitriptan	Zolmitriptan	VAS

Abbreviations: Tri: trial group; Con: control group.

3.3 Quality Assessment of Included Literature

A quality evaluation was conducted on the five included RCTs. As shown in Figure 2, four studies did not adopt blinding methods, and the rest did not mention blinding methods.

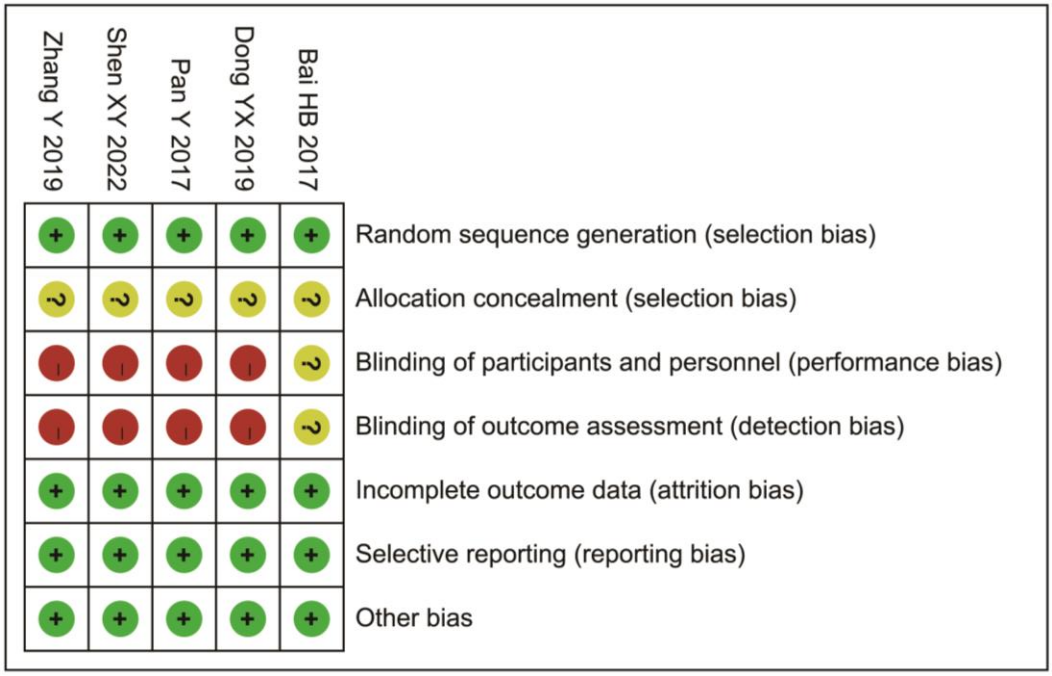

Figure 2. Risk of bias summary

3.4 Meta-Analysis of Outcome Indicators

3.4.1 Efficacy

A total of 5 migraine-related clinical studies were included (Zhang Y., 2019; Pan Y & Chen Q., 2017; Dong YX., 2019; Bai HB., 2017; Shen XY, Zhang L, Li X, et al., 2022), as shown in Figure 3. There was no significant heterogeneity between studies (P=0.99, I^2=0%). The Fixed model was used and the experimental group was compared with the control group. The difference in clinical efficacy is statistically significant ([RR=0.81, 95%CI (0.75, 0.89), P<0.00001]).

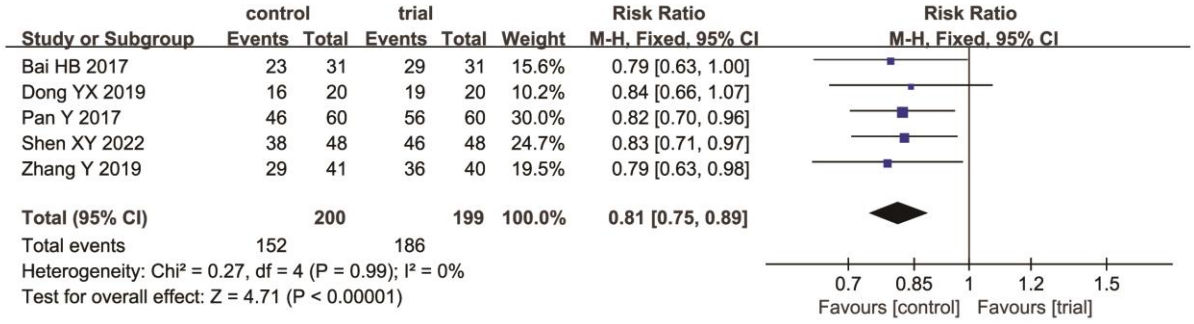

Figure 3. Forest diagram of efficacy

3.4.2 Adverse Reaction Rate

A total of 3 migraine-related clinical studies were included (Pan Y & Chen Q., 2017; Dong YX., 2019; Bai HB., 2017), as shown in Figure 4. There was no significant heterogeneity between studies (P=0.24, I^2=29%). The Fixed model was used and the experimental group was compared with the control group. The difference in adverse reaction rate is statistically significant ([RR=1.37, 95%CI (0.74, 2.54), P=0.32]).

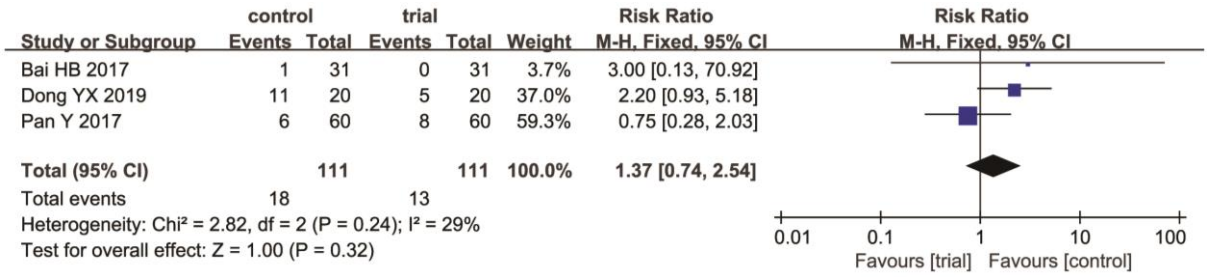

Figure 4. Forest diagram of adverse reaction rate

3.4.3 Visual Analogue Score (VAS)

A total of 4 migraine-related clinical studies were included (Zhang Y., 2019; Pan Y & Chen Q., 2017; Bai HB., 2017; Shen XY, Zhang L, Li X, et al., 2022), as shown in Figure 4. There was no significant heterogeneity between studies ($P<$ 0.00001, I^2=95%). The random model was used and the experimental group was compared with the control group. The difference in VAS is statistically significant ([*MD*=-1.37, 95%CI (-2.00, -0.75), $P<0.00001$]).

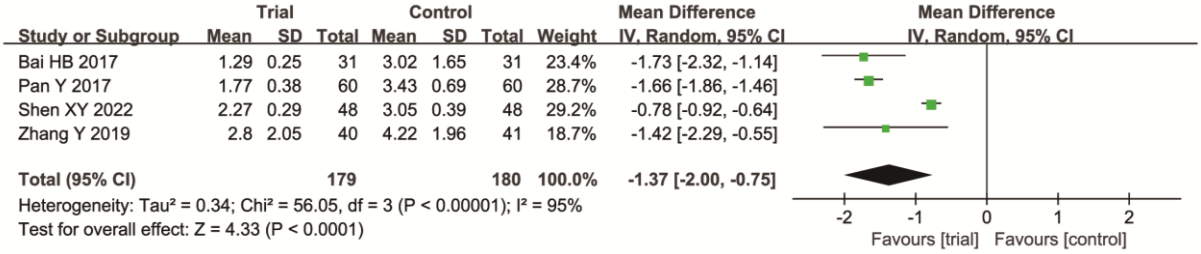

Figure 5. Forest diagram of VAS

4. Discussion

Acute migraine is a debilitating neurological disorder characterized by severe, pulsating headaches often accompanied by nausea and vomiting. TCM treatments for acute migraine often include acupuncture, herbal remedies, and dietary adjustments, which has the advantage of few side effects (Liu L, Tian T, Li X, et al., 2021).

This study used a meta-analysis method to systematically evaluate the clinical efficacy of traditional Chinese medicine and its combined treatment in acute migraine. The results showed that compared with western medicine, the total effective rate after TCM treatment was significantly improved, the incidence of adverse reactions was significantly reduced, and the VAS was significantly improved.

Fund Project

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References

Bai HB. (2017). Clinical effects of acupuncture and Gastrodia Baizhu decoction in the treatment of acute migraine attacks. *Clinical Medical Research and Practice, 2*(3), 112-113.

Dong YX. (2019). Research on the acupoints used for treating migraine without aura in the acute phase with Biantong Patch. Hubei University of Traditional Chinese Medicine.

Liu L, Tian T, Li X, et al. (2021). Revealing the neural mechanism underlying the effects of acupuncture on migraine: a systematic review. Frontiers in Neuroscience, 15, 674852.

Minen MT, Zhou K, Miller L. (2020). A Brief Look at Urgent Care Visits for Migraine: The Care Received and Ideas to Guide Migraine Care in this Proliferating Medical Setting. *Headache, 60*(3), 542-552.

Pan Y, Chen Q. (2017). The efficacy of traditional Chinese medicine for dispelling wind and unblocking collaterals + scalp acupuncture in the treatment of acute attacks of migraine and its effects on substance P, 5-hydroxytryptamine, and homocysteine.

Journal of Modern Integrated Traditional Chinese and Western Medicine, 26(30), 3360-3362.

Shen XY, Zhang L, Li X, et al. (2022). Observation on the efficacy of self-prepared modified and subtracted prescriptions for dispelling wind, reducing phlegm and relieving pain in the treatment of acute attacks of migraine (wind-phlegm disturbance syndrome). *Chinese Medicine for Emergencies, 31*(1), 101-104.

Zhang Y. (2019). Clinical observation of pricking bloodletting combined with thumb cupping in the treatment of acute migraine. Guangzhou University of Traditional Chinese Medicine.