*Review Article*

**To What Extent Does Science Support the Recommendation of Cupping Therapy for Migraines? A Step Toward Creating Guidelines Based on Evidence**

**Abstract**

**Background:** Migraines are extremely incapacitating headaches. Cupping therapy is a successful treatment that lessens the severity of headaches and migraines. The study aims to determine the level of scientific support for cupping therapy as a treatment for migraines.

**Methods:** Published systematic reviews, meta-analyses, and Clinical Practice Guidelines (CPGs) about cupping therapy for migraines were examined. PubMed, Research Gate, Google Scholar, Science Direct, Trip, OVID, Cochrane Library, and CINAHIL were among the medical databases that were reviewed. Cupping therapy's safety and effectiveness in treating migraines, either by itself or in combination, were evaluated.

**Results:** Three systematic reviews incorporated eighteen clinical trials and CPGs of Traditional Korean Medicine were reviewed. Sixteen wet cupping and two dry cupping studies were used. The study found significant treatment success with cupping therapy compared to controls. Cupping therapy significantly reduced pain intensity either alone or in combination with drugs.One to eight cupping points are used with different treatment regimens according to Traditional Chinese Medicine, Prophetic Medicine, Korean Medicine and Persian Medicine.

**Conclusion:** Migraines can be effectively treated with wet cupping either alone or, more effectively, in conjunction with other medications. It emphasizes the need for improved quality and transparency in research and is a major step towards comprehending the evidence and recommendations for cupping therapy within the CPGs in migraine. It is required that cupping therapy be included in the recommendations for treating migraine headaches.

**Keywords:** Cupping, migraine, cupping therapy, PubMed

1. **Introduction:**

About 15% of the general population suffers from migraine headaches, a neurological condition that can be extremely incapacitating [1-2]. The Global Burden of Disease Study ranks it as the second most common neurological condition globally. More disability is linked to it than to all other neurological conditions put together [2–3]. Clinically, it presents as frequent headache episodes with a variety of concomitant symptoms [4]. Transient neurological abnormalities known as migraine aura precede or accompany migraine in about one-third of instances [5]. Additionally, a small percentage of afflicted individuals get chronic migraine, which results in extremely frequent attacks [6]. The patient may be bedridden for days due to the incapacitating, throbbing, unilateral headache. Symptoms including weariness, nausea, changes in vision, irritation, and more may be made worse by movement, lights, sounds, and other triggers. Although the precise origin of migraines is unknown, some research indicates that heredity may be involved. A first-degree biological relative of up to 80% of migraine patients has the disorder [7].

Migraines have no known remedy or definite cure. However, by taking medicine, avoiding migraine triggers, and using alternative migraine therapies, a healthcare provider can assist manage migraine symptoms [8]. Clinical care is still not at its best despite these therapeutic alternatives and thorough diagnostic criteria. Significant public health issues include migraine misdiagnosis and undertreatment [9–10]. According to population-based data from Europe, only 2–14% of eligible adults use preventative medicine for migraines [9], which is a concerning result that demands international action [10]. To enable precise diagnosis and evidence-based treatment, a thorough strategy is required. Drug therapy has limitations, including adverse effects and misuse, despite the development and updating of pharmacologic treatment recommendations for migraine headaches [11–13].

Thus, a variety of complementary and alternative medical techniques, such as acupuncture, herbal medicine, moxibustion, and cupping, are utilized clinically in East Asia to treat migraines [14, 15]. Since ancient times, cupping has been used as a complementary medicine treatment [16]. Clinical settings have used a variety of cupping techniques, such as empty cupping, wet cupping, dry cupping, and moving cupping. In the Middle East, cupping therapy, often referred to as Hijama therapy, is commonly used [17]. Few systematic studies of cupping therapies have been published, even though they are used all over the world [18–22]. Numerous case studies and randomized clinical trials demonstrate the effectiveness of cupping for diseases of the nervous system and blood circulation [23–24]. Cupping techniques have been used specifically to alleviate headaches and migraines [25]. Nevertheless, there aren't many comprehensive studies on how well cupping therapy works for migraines.

Cupping therapy was not listed as an alternative or complementary treatment for migraine management in the guidelines for migraine treatment published by the American Academy of Neurology (AAN), the American Headache Society (AHS) [26], the International Headache Society (IHS) [27], the European Headache Federation, and the European Academy of Neurology. This study's goal is to add evidence-based cupping therapy to the recommended treatment guidelines for migraines.

1. **Material and Methods:**

### **Data Sources and Search Methods:**

The following electronic databases were searched from its inception to 12 October 2024: the Cochrane Library, EMBASE, OVID, TRIP, Research Gate, Google Scholar, and CINAHIL. MEDLINE was thoroughly searched using the PubMed database. The phrases migraine, cupping therapy, systematic reviews, meta-analysis, and CPGs were used to build the search strategy. The actual search phrases were changed and applied based on the environment of each database. To find all pertinent records, the research team employed specific keywords: "cupping," "blood cupping," "wet cupping," "hijama," or "hijamah" to represent the intervention, and "migraine" OR "migraine headache" to describe our demographic. Relevant CPGs were also identified using the National Clearinghouse for Korean Medicine (NCKM) CPG database [28]. This is a reliable source backed by the Republic of Korea's Ministry of Health and Welfare (MoHW) [29]. The purpose of the above focused search was to find the most current and pertinent CPGs for cupping therapy (CT) in migraine. For the purpose of this assessment, guidelines that advocate for the use of CT either alone (monotherapy) or in conjunction with other therapeutic approaches (polytherapy) were deemed eligible.

* 1. **Study Selection:**

Two authors independently carried out the selection process. They chose the studies that were most likely to be appropriate for the purpose by looking over the abstracts and titles in the primary selection process. The complete texts of the chosen primary studies were then examined and verified. In cases where there was disagreement, enough discussion was held before the ultimate choice was chosen. The following criteria for inclusion and exclusion were applied.

### **Inclusion Criteria:**

The inclusion criteria were as follows:

(1) Systematic reviews and meta-analysis that were written in English,

(2) Studies with participants diagnosed with migraine;

(3) Studies that used cupping treatment alone or as an adjunct to other treatments as experimental interventions; and

(4) Studies that used a placebo or conventional drug therapy as control interventions.

* 1. **Exclusion Criteria:**

The exclusion criteria were as follows:

(1) The studies that included cupping treatment in both groups as the intervention;

(2) The full text could not be available or impossible to extract data;

### (3) Studies in a language other than English;

### (4) Observational studies and other non-clinical trial studies;

### (5) Participants diagnosed with other types of headaches, including tension or cluster headache or headache due to a known secondary etiology; and

### (4) a thesis or dissertation.

### **Data Extraction and Quality Assessment**

Two independent authors performed the data extraction and quality assessment of the systematic reviews and meta-analysis using a data extraction form on Excel software. The data extraction covered the following categories: basic data, assessment of evidence, and recommendations in addition to risk of bias. The basic data included: the principal author’s name, publication year, study country, overall sample size, mean age, and mean duration of migraines in years, cupping characteristics (wet or dry, number of cupping sessions, cupping duration in minutes, body area being cupped), and follow up duration. We extracted relevant safety and efficacy endpoint data, including total adverse events (AEs) and treatment success. The conclusion of the systematic reviews was discussed. The results of the Quality evaluation of each study included in the systematic reviews assessed with the “Risk of bias” tool from the Cochrane Handbook Version 6.0, was also discussed. It included seven domains: random sequence generation, allocation concealment, selective reporting, blinding of participants and personnel, blinding of outcome assessment, incomplete outcome data and other biases. Possible responses were low risk, high risk, or unclear risk of bias. The results of this process were cross-checked by two authors. Disagreements were resolved with a discussion.

###  **Data Analysis:**

#### **Outcome Measures:**

The primary outcomes were treatment success, i.e. migraine cure measured by:

1. Changes in pain intensity of headache according to either the visual analog scale (VAS) or the equivalent comparative pain scale (CPS) tool.
2. Mean change in pain intensity, and
3. Improved effectiveness such as the total treatment effective rate (TER).

Secondary outcomes were evaluated by:

1. Migraine-related symptoms as measured with validated questionnaires;
2. Migraine-accompanying symptoms;
3. Assessing safety, measured by the incidence of adverse events; and
4. Enhancing quality of life (QoL) using the MIDAS tool.
	* 1. ***Assessment of Evidence:***

This included the evaluation of level of evidence supporting the safety and effectiveness of cupping therapy (high, moderate, low, or very low), taking into consideration the strengths and limitations of the evidence base.

* + 1. **Levels of quality of evidence:**
1. **High:** denotes strong confidence that the true effect is proximal to the estimated effect and suggests that further research is unlikely to alter confidence in the effect estimate.
2. **Moderate:** reflects a moderate confidence in the effect estimate, supporting the possibility that the true effect could be significantly different, and with further research, may potentially affect the confidence in this estimate.
3. **Low:** means that there is limited confidence in the effect estimate, and the true effect could be substantially different, hence, further research is likely to influence the confidence in the effect and potentially modify the estimate.
4. **Very low:** indicates minimal confidence in the effect estimate, with an expectation that the true effect diverges significantly from the estimate, and additional research is very likely to change both the confidence in and the actual effect estimate [28,30,31].

The reasons for each level of evidence appointment were noted, providing circumstances for the rigor and reliability of an overall rating of confidence.

* + 1. ***Recommendations:***

The grade of recommendation was extracted, which is crucial in understanding the decision-making process behind the guidelines. Recommendations are classified as:

1. **Grade A:** reflects a high degree of confidence in the efficacy and benefit of the treatment. They are strongly endorsed for implementation in almost all clinical scenarios.
2. **Grade B:** recommended in most clinical situations and should be given considerable weight in clinical decision-making.
3. **Grade C:** indicates potential benefits in some but, not all clinical contexts, thereby requiring careful consideration of individual patient circumstances before treatment.
4. **Grade D:** requires caution against the use in most clinical practices but, these recommendations are often due to a lack of sufficient evidence of the benefit or potential for harm [28, 30-32].
5. **Results:**
	1. **Results of the search and description of the included studies:**

### Figure (1) illustrates the PRISMA flowchart of process for identifying 428 articles from eight databases. In the first phase of screening, we removed 56 duplicates. After further title/abstract screening for eligibility, we excluded 356 studies: studies that did not assess migraines (n = 275), a case report (n = 2), studies unrelated to cupping (n = 60), research with no results (n = 8), non-English/Chinese articles (n = 3), and review articles (n = 10). After a full-text screening, we excluded 13 studies due to irrelevant interventions (n = 10) and no results (n = 3). We included a total of three systematic reviews. One systematic review included 18 RCTs. The other systematic review included 6 RCTs. The third one included 14 RCTs, but only one for migraine. The total RCTs from the three systematic reviews included for qualitative analysis were 18.

The 18 trials included for analysis (table 1) were published between 2002-2024 [33-50]. Twelve trials were conducted in China, three in Iran, two in Turkey, and one in Iraq. Of these, 14 were open-label randomized controlled trials (77%) and two studies were single-arm trials. The total sample size was 1,446 participants, of which 55% received cupping (n = 797). The age ranged from 18-65 years. The duration of migraine diagnosis ranged from 0.5-16 years. The follow-up period varied between two weeks - two years. Most studies did not report the type of migraine headache (table 1).

* 1. **Description of cupping therapy:**

Wet cupping was used in 16 trials, whereas two trials used dry cupping. Four studies used cupping as the only intervention (monotherapy). The other 14 trials used polytherapy; five combined cupping with conventional drugs, three combined cupping and collateral pricking, two combined cupping with acupuncture, two studies combined cupping with collateral pricking and acupuncture, one combined cupping with acupuncture and conventional drugs and one combined cupping with collateral pricking and conventional drugs. There was no placebo used as a control arm. The control arm was the standard medication therapy in 13 studies; of which five studies used oral flunarizine, two studies used oral diclofenac sodium, one trial used rizatriptan benzoate, and one study used combination therapy. On the other hand, four studies did not specify the drugs administered. Acupuncture was used as a control arm in three studies, while two studies had no data (table 1).

There were between 1-16 cupping sessions in the intervention arm, with one trial employing the intervention on an as-needed basis [33] and another trial not specifying the number of sessions [34]. The session duration varied from 5-30 minutes, while five trials did not specify the duration of sessions. Furthermore, the body areas subjected to cupping varied widely across trials, ranging from 1-8 points. Eight studies used only one point for cupping; four used interscapular area, three used temples, and one used GB20 on the back of the neck. While ten studies employed a combination of sites. The most frequent cupping point used in seven studies was EX-HN5 on the temples. The risk of adverse events was rare in patients receiving cupping therapy. Only two studies recorded mild adverse events: one case of nausea and two cases reported dizziness. These adverse events were lower than those in the control group (table 2).

“Overall, there was a significant improvement in 83% of patients who underwent treatment compared to controls. Eleven studies reported successful migraine treatment. A subgroup analysis based on adjunctive therapy showed significant improvements with cupping alone and adjunctive treatments. Cupping alone achieved the greatest success. Dry cupping did not improve treatment success. Cupping therapy achieved greater migraine pain reduction compared to the control. However, adjunctive therapy with collateral pricking did not achieve a significant reduction. Among other subgroups, one study found that the combination of cupping, collateral pricking, and acupuncture achieved the greatest pain reduction”.[55]

Most included trials were of poor quality. The level of evidence for cupping therapy in Traditional Korean Medicine CPGs varied from “low” to “moderate,” which was downgraded due to risk of bias (RoB), imprecision, and/or inconsistency. The grades of recommendation for cupping therapy ranged from “B” to “C,” suggesting that practitioners may not be confident in applying cupping therapy. The grading was influenced by factors including benefit-harm assessment, level of evidence, and/or availability in clinical practice. The evidence rated as “moderate” level had been downgraded due to contributing factors such as imprecision, risk of bias, and inconsistency. Evidence appraised as “low” level was predominantly downgraded due to the risk of bias and imprecision, with inconsistency occasionally serving as an additional contributing factor. Notably, there were no recommendations where the level of evidence was diminished due to indirectness or publication bias.

1. **Discussion:**

Migraine is a worldwide neurological disorder that adds substantially to the global burden of disease. Despite the existence of comprehensive diagnostic criteria and multiple therapeutic options, diagnosis and clinical management of migraine remain suboptimal worldwide. This study was developed to provide generally applicable recommendations for using cupping therapy in migraine management. The results are based on systematic reviews and meta-analyses of RCTs of cupping in migraine, published evidence, and recommendations of CPGs in Korea.

“Cupping therapy is an essential, widely implemented complementary and alternative therapeutic modality in the treatment of migraine headaches. In Saudi Arabia, it is estimated that 40.0% of patients with primary headache disorders, including migraine, sought cupping therapy” [51]. Nearly the same figure in Kuwait, where 47.3% sought cupping therapy [52]. “Cupping therapy has potential benefits for several types of pain, hypertension, herpes zoster, migraine and cough” [30,53,54].

This study included three systematic reviews incorporating 18 clinical trials to assess the therapeutic benefits of cupping therapy in migraine treatment, in addition to clinical practice guidelines of Korea for cupping therapy in migraine. Our study found significant treatment success with cupping therapy compared to controls. The benefits appeared to be significant only with the wet cupping technique. Cupping therapy significantly reduced pain intensity, however, adding acupuncture or collateral pricking did not improve overall treatment success compared to cupping alone.

The first systematic review [55] evaluates the effectiveness of cupping for migraine headaches, involving 1,446 participants. The second systematic review by Seo et al. [56] evaluated the efficacy of cupping therapy for migraines involving six RCTs and 510 participants. Similarly, Dong et al. [57] evaluated “the role of wet cupping in treating primary migraine disorders, such as tension-type, migraine, and trigeminal neuralgia. Both studies reported a significant reduction in pain among patients receiving cupping therapy plus drugs, compared to using drugs alone, and significant pain reduction with cupping and acupuncture compared to acupuncture alone. Furthermore, Dong et al. reported no significant difference in pain reduction with cupping alone compared to drugs. The included studies were generally limited in reporting the impact of cupping therapy on quality of life (QoL) among migraine patients. The QoL based on the migraine disability scale (MIDAS) was derived from only two trials, which contradicted each other” [46,48]. So, it is not evaluated in this study.

The study found a significant difference in the AEs risk, favoring cupping therapy. This contradicted the work of Dong et al. [57], which reported insignificant differences in AE risks (RR = 1.33). This difference was because our study analyzed trials specifically focusing on migraines. In contrast, Dong et al. [57] included other primary headache disorders, notably tension-type headaches, in their analysis. In this study, despite the significant treatment success and reduction of pain achieved by combining cupping therapy with acupuncture, the addition of collateral pricking was not associated with substantial improvements in pain reduction. The role of collateral pricking in treating migraines has not been previously evaluated.

Due to the different control treatments and the insufficient number of studies, the studies were analyzed qualitatively in the wet cupping versus drugs group and wet cupping plus drugs versus drugs. The results of each study showed that wet cupping was more effective in the reduction of headache intensity than drugs. Quantitative synthesis was impossible because of inconsistent outcome measurements. Similarly, the results showed that wet cupping accompanied by drugs significantly improved symptoms of migraine. The quality of the level of evidence was low in the wet cupping versus drugs group and dry cupping plus acupuncture versus acupuncture group. Although there were a few reports of adverse events among the included studies, it was possible to suggest that the cupping therapy was a safe treatment because the adverse reaction was less than the drugs in the included studies.

One major challenge in implementing cupping as an evidence-based practice is the uniformly low methodological quality of the published trials. This was reported in all studies assessing the risks and benefits of cupping, including the study of Seo et al. [56], Dong et al. [57], and Liu et al. [58], which focused on primary headache disorders. Our study similarly found that none of the available pooled studies were of good quality. Consequently, this phenomenon limits the certainty of cupping as an effective treatment method for migraines. “There are limited preceding systematic reviews assessing the efficacy and safety of cupping therapy that include an evaluation of the evidence level. However, some evidence-based studies that assessed the evidence for cupping therapy align with the findings of this current review, which identified “low” to “moderate” levels of evidence” [59,60].

“It is essential to be transparent in the reasoning used to support the grade of recommendations. In the manual for developing standard CPGs in TKM, it is advised that benefits and harms, level of evidence, clinical applicability, medical cost, and patient preferences need to be comprehensively evaluated” [30,61]. “While most of the trials included in this study have adequately assessed the level of evidence and clinical effectiveness, other criteria have not been sufficiently assessed. Considering that many RCTs have not adequately reported analysis of safety outcomes, the safety assessments for cupping therapy require more attention” [62, 63].

The primary strength of this current study is that this is the first review to evaluate the evidence and recommendations for cupping therapy, based on the most recent systematic reviews and up-to-date CPGs published in Korea. This study systematically categorized and analyzed the evidence underlying recommendations to guide the direction of future research and suggest how recommendations could be refined.

The limitations of this study are as follows: (1) Difficulty of blindness and placebo in clinical trials of cupping research. (2) It does not handle patient data directly, nor does it conduct systematic reviews and meta-analyses used to develop CPGs. (3) The research methodology for systematic reviews used in this study is also potentially contentious, suggesting that further research is needed to refine reproducible methodologies. (4) The development of CPGs is still in progress, meaning that the findings reported in this study may change according to the recommendations in systematic reviews and CPGs that will be published in the future.

1. **Conclusion:**

Wet cupping therapy is an effective treatment for migraine either alone or better in combination with conventional drugs. Dry cupping in combination with acupuncture is also effective in migraine. Further high-quality studies are required to elevate the level of evidence. Adding cupping therapy to the guidelines for the treatment of migraine headaches is mandatory. This study represented a significant step toward understanding the evidence and recommendations for cupping therapy within the CPGs in migraine, highlighting the need for enhanced quality and transparency in cupping therapy research. It sets the foundations for future studies to build upon and ultimately advance the integration of cupping therapy into evidence-based clinical practice.

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**Figure (1): PRISMA 2009 Flow Diagram**

Records excluded
(n = 356)

Records screened
(n = 372)

Records after duplicates removed
(n = 372)

RCTs included for analysis from the 3 systematic reviews
(n = 18)

Studies (systematic reviews) included in qualitative synthesis
(n = 3)

Additional records identified through other sources
(n = 2 )

Full-text articles excluded, with reasons
(n = 13)

Full-text articles assessed for eligibility
(n = 16)

Records identified through database searching
(n = 426 )

## Included

## Eligibility

## Screening

## Identification

**Table 1: Details of the included studies.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| StudyID | age (years)casesControl | Sample size | Duration of disease (years)casesControl | Origin of primary study | Monotherapy or polytherapy | TreatmentGroupintervention | ControlGroupintervention | Treatment duration/ Follow-up duration |
| Zhang et al. (2002) [35] | 36.45±10.4638.15±12.26 | 64 | NA | China | polytherapy | Cupping & acupuncture & oral flunarizine  | Oral flunarizine  | 1 month |
| Wei (2002) [36] | NA | 68 | NA | China | polytherapy | Cupping + CP & acupuncture  | Acupuncture  | 1 year |
| Ahmadi et al. (2008) [37] | 38.77±12.91 | 70 | NA | Iran | polytherapy | Cupping + serkangabin  | NA | 3 months |
| Hao (2011) [38] | NA | 62 | NA | China | polytherapy | Cupping + CP Chinese decoction native medicine  | CP Chinese decoction native medicine | 3 months |
| Qin and Song (2012) [39} | 36.1±NA36.4±NA | 90 | NA | China | Monotherapy | Cupping  | Oral nimodipine, flunarizine, 5% glucose injection, acanthopanax inj  | 6 months |
| Li et al. (2012) [40] | 36.5±NA31.2±NA | 70 | 9.2±NA8.7±NA | China | Polytherapy | Cupping + acupuncture  | acupuncture  | 3 months |
| Song et al.(2013) [41] | 35.40±3.1436.1±2.3 | 90 | 4.32±2.23.5±2.8 | China | Monotherapy | Cupping | Oral flunarizine + Ibuprofen (at acute attack) | 1 month |
| Firoozabadi et al. (2014) [42] | 31.7±7.632.6±12.7 | 60 | NA | Iran | Polytherapy | Cupping + serkangabin  | Conventional treatment  | 6 months |
| Jin et al. (2015) [43] | 34±NA33±NA | 70 | 7.24±NA6.81±NA | China | Polytherapy | Cupping+CP& acupuncture  | acupuncture  | 2months |
| Jiang et al.(2015)[44] | 20-6518-57 | 60 | 0.5-162-13 | China | Monotherapy | Cupping | Oral flunarizine  | 4 weeks |
| Liu and Li (2016) [33] | 41.71±13.5142.47±13.6 | 60 | 5.13±4.85.03±4.69 | China | polytherapy | Cupping +CP | Oral dicliphenac sodium | 3 months |
| Benli andSunay(2017) [45] | 40.59±8.64 | 85 | NA | Turkey | Monotherapy | Cupping | NA | 2 years |
| Li and Bi (2017)[46] | 37.3±9.536.9±9.3 | 64 | 5.8±1.75.9±1.9 | China | Polytherapy | Cupping + acupuncture  | Oral flunarizine  | 1 month |
| Zarel et al. (2019)[47] | 34.7±10.2 | 132 | NA | Iran | Polytherapy | Cupping + pain killer | pain killer | 2 & 6 weeks |
| Chen et al. (2019) [34] | 40.62±3.5542.45±3.64 | 60 | 2.34±0.252.62±0.57 | China | polytherapy | Cupping +CP | Oral dicliphenac sodium | 3 months |
| Ersoy and Benli (2020)[48] | 41±8.5339.51±9.71 | 109 | NA | Turkey | Polytherapy | Cupping + std treatment | std treatment | 6 & 12 months |
| Zhang et al. (2020) [49] | 31.84±9.0431.68±8.47 | 130 | 3.13±1.823.19±8.47 | China | Polytherapy | Cupping +CP & Rizatriptan benzoate | Rizatriptan benzoate | 20 days |
| Abdullah et al. (2024) [50] | 33.39±12.4932.44±9.01 | 72 | 4.5±3.426.1±5.59 | Iraq | Polytherapy | Cupping + std treatment | std treatment | 1 hour, 1 month |

**Table 2: Cupping characteristics.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| StudyID | Methods of cupping | Number of cuppingpoints | Cupping points | Number of treatment sessions | Duration of sessions | Frequency of sessions/time of cupping | Side effects | Level of evidence / Grade of recommendation  |
| Zhang et al. (2002) [35] | WCT | 2  | scalp and temples on the side of headache | 2 | 5 | NA | NA | Low/C  |
| Wei (2002) [36] | WCT | 1 | Temple area  | 10 | 10 | NA | NA | Low/C  |
| Ahmadi et al. (2008) [37] | WCT | 1 | Interscapular opposite to T1–T3 scapular spine  | 3 | 20 | NA | NA | Low/C |
| Hao (2011) [38] | WCT | 1 | Liver shu point (T9 paravertebra) | 7 | 10-15 | NA | NA | Low/C  |
| Qin and Song (2012) [39] | WCT | 3 | GB20, GV14, BL11 | 8 | 10-15 | NA | NA | Low/C  |
| Li et al. (2012) [40] | WCT | 7 | GV20, GV24, ST8, temple, GB20, GB14 & TH5  | 15 | 30 | NA | NA | Moderate / B  |
| Song et al.(2013) [41] | WCT | 8 | BL2, GB21, temple bilateral, GB20 bilateral, & GV14 | 16 | 15 | 2 per week | NA | Moderate / B  |
| Firoozabadi et al. (2014) [42] | WCT | 1 | area at level Midline ISC T3-T5  | 3 | NA | NA | NA | Low/C |
| Jin et al. (2015) [43] | DCT | 1 | BSP | 16 | 5 | 2 per week | NA | Low/C  |
| Jiang et al.(2015)[44] | WCT | 2 | 1.5 inch below & lateral to C7 (bilateral) BL 17 | 8 | 20 | 2 per week | NA | Moderate / B  |
| Liu and Li (2016) [33] | WCT | 1 | Temple area | During attack | NA | NA | Nausea (one case) | Low/C  |
| Benli andSunay(2017) [45] | WCT | 8 | 4 sites bilaterally: at level C7, T3 ISC and T7 | 3 | 20 | NA | NA | Low/C |
| Li and Bi (2017)[46] | DCT **limitations** | 1 | GB20 to acromial end | 4 | NA | NA | NA | Low/C  |
| Zarel et al. (2019)[47] | WCT | NA | NA | 3 | NA | NA | NA | Low/C  |
| Chen et al. (2019) [34] | WCT | 1 | Temple area EX-HN5 | NA | NA | Unclear (at the time of migraine attack)/unclear | dizziness2 cases | Moderate / B  |
| Ersoy and Benli (2020)[48] | WCT | 5 | GV14, BL41-42, BL44-46 | 12 | 20 | Demand rather than a single-month application | NA | Moderate / B  |
| Zhang et al. (2020) [49] | WCT | 6 | GV14, SJ5, bilateral temples & suprascapular fossa | 4 | 5 | 1 per 5 days | NA | Moderate / B  |
| Abdullah et al. (2024) [50] | WCT | 4 | 2 ISC, 2 at the sides & back of neck | 1 | 20 | NA | NA | Low/C |

**Table 3. Summary of the risk of bias.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Random sequence generation  | Allocation concealment  | Selective reporting  | Blinding of participants and personnel  | Blinding of outcome assessment  | Incomplete outcome data  | Other bias  |
| Zhang et al. (2002) [35] | High risk  | Unclear  | High risk  | High risk  | Unclear  | Unclear  | Unclear  |
| Wei (2002) [36] | Low risk  | Unclear  | Low risk  | High risk  | Unclear  | Unclear  | Unclear  |
| Ahmadi et al. (2008) [37] | High risk  | Unclear  | High risk  | Unclear | Unclear  | Low risk | High risk  |
| Hao (2011) [38] | High risk  | High risk  | High risk  | High risk  | Unclear  | Unclear  | Unclear  |
| Qin and Song (2012) [39] | High risk  | Unclear  | Low risk | High risk  | Unclear  | Low risk | Unclear  |
| Li et al. (2012) [40] | Unclear  | Unclear  | Unclear  | Low risk  | Unclear  | Low risk  | Unclear  |
| Song et al.(2013) [41] | Low risk  | Unclear  | Low risk | High risk  | Unclear  | Unclear  | Low risk  |
| Firoozabadi et al. (2014) [42] | High risk  | High risk  | High risk  | High risk  | Unclear  | Low risk  | Unclear  |
| Jin et al. (2015) [43] | Low risk  | unclear  | unclear | High risk  | Low risk  | Low risk  | Low risk  |
| Jiang et al.(2015)[44] | Unclear  | Unclear  | Unclear  | High risk  | Unclear  | Low risk | Low risk |
| Liu and Li (2016) [33] | High risk  | Unclear  | High risk  | High risk  | Unclear  | Unclear  | Unclear  |
| Benli andSunay(2017) [45] | High risk  | Unclear  | High risk  | High risk  | Unclear  | High risk  | High risk  |
| Li and Bi (2017)[46] | Low risk  | Unclear  | Low risk  | High risk  | Unclear  | Low risk | Unclear  |
| Zarel et al. (2019)[47] | High risk  | Unclear  | Unclear  | Unclear | Unclear  | Low risk | Unclear  |
| Chen et al. (2019) [34] | Unclear | Unclear  | Unclear | High risk  | Unclear  | Low risk | Low risk  |
| Ersoy and Benli (2020)[48] | Low risk  | Unclear  | Low risk  | High risk  | High risk  | Low risk  | Unclear  |
| Zhang et al. (2020) [49] | Low risk  | Unclear  | Unclear | High risk  | Unclear | Low risk  | Low risk  |
| Abdullah et al. (2024) [50] | High risk  | High risk  | Low risk | High risk  | High risk  | Low risk  | High risk  |

**Table 4. Level of Evidence and Grade of Recommendations for Cupping Therapy Included in the Clinical Practice Guidelines of Traditional Korean Medicine.**

|  |  |
| --- | --- |
| Evaluation of Evidence | Grade of Recommendations |
| Level of Evidence | Reasons to downgrade the level  | Grade  | Benefit  | Harm  | Level of Evidence | Availability in clinical practice  | Cost |
| Moderate  | RoB, Imprecision  | B | Assessed  | Assessed without reasons  | Assessed  | Assessed with professional consensus  | Not assessed |
| Moderate | RoB, Imprecision | B | Assessed  | Assessed without reasons | Assessed  | Assessed with statistics  | Not assessed |
| Moderate | RoB, Imprecision | B | Assessed  | Assessed without reasons | Assessed  | Assessed with professional consensus | Not assessed |
| Moderate | RoB, Imprecision | B | Assessed  | Assessed with preceding safety reports  | Assessed  | Assessed with professional consensus | Not assessed |

RoB= Risk of Bias