Systematic Review and Meta-Analysis

Medicine

OPEN

Effects of acupuncture in the treatment of occipital neuralgia

A systematic review and meta-analysis

Huabin Zheng, MD[a], Chong Li, MD[a], Jike Hu, MD[a], Li Zeng, MD[b]

Abstract

Background: Acupuncture is used to treat subjects with occipital neuralgia, which is 1 of the main causes of occipital pain; however, its effect is conflicting. Hence, the current study aims to evaluate the effects of acupuncture in the treatment of occipital neuralgia.

Methods: In a systematic search of PubMed, Embase, OVID, China National Knowledge Infrastructure, Cochrane Library, Chinese Biomedical Literature Database, Wanfang databases, and Google Scholar until July 2021, 15 studies aimed to evaluate the effects of acupuncture in the treatment of occipital neuralgia were included. Human-related trials were considered in different languages. The size of the study was not considered a limit for its inclusion and the study intervention should focus on comparing the impact of acupuncture in the intervention group compared with the control group.

The odds ratio (OR) and the mean difference (MD) with 95% confidence intervals (CIs) were calculated with a random or fixed-effect model for different subgroup analyses. Publication bias was assessed using the Egger test, while the risk of bias was assessed using the Review manager software.

Results: Acupuncture had a significantly higher effective rate of treatment (OR, 5.40; 95% CI, 2.48 to 11.77, $P < .001$) compared to control in the treatment of occipital neuralgia and lower visual analogue scale (MD, −2.45; 95% CI, −2.69 to −2.21, $P < .001$). Acupuncture plus medication had a significantly higher effective rate of treatment (OR, 3.96; 95% CI, 2.10 to 7.47, $P < .001$) compared to medication in the treatment of occipital neuralgia. Acupuncture analysis for safety issues showed a significant reduction of adverse events compared with the medication group.

Conclusion: Acupuncture alone or acupuncture plus medication had a significantly beneficial effect on the effective rate of treatment, safety and visual analog scale compared to medication in the treatment of occipital neuralgia. Further studies are required to validate these findings.

Abbreviations: CIs = confidence intervals, GRADE = Grading of Recommendations, Assessment, Development, and Evaluation, MD = mean difference, OR = odds ratio, VAS = visual analogue scale.

Keywords: acupuncture, effective rate, medication, occipital neuralgia, visual analog scale

1. Introduction

The ailment known as occipital neuralgia causes sudden, severe pain in the back of 1 or both sides of a person's head. It's a headache caused by issues with the occipital nerves (the lesser, the greater, or the third), and it can cause sensory changes or even a complete lack of sensation in the affected area. The dorsal ramus of the cervical spinal nerve is the typical origin of the lesser and larger occipital nerves.[1] The greater occipital nerve[2] travels from where the trapezius muscle attaches to the occipital bone, up through the semispinalis capitis, and out through the scalp, where it forms the inferior edge of the sub-occipital triangle. Pressure, inflammation, and friction along the trajectories of these nerves contribute to the development of occipital neuralgia.[2] The lesser occipital nerve arises along the posterior margin of the sternocleidomastoid and then branches as it approaches the scalp, innervating the area lateral to the distribution of the greater occipital nerve.[3]

HZ, CL and JH contributed equally to this work.

Study on the Formulation Reform of the Tibetan Medicine "Wu Wei Gan Lu Medicated Bath Powder"2100601-Project for Traditional Chinese Medicine (Ethnic Medicine).

The authors have no conflicts of interest to disclose.

The datasets generated during and/or analyzed during the current study are not publicly available, but are available from the corresponding author on reasonable request.

The authors have no ethical statement to disclose.

Supplemental Digital Content is available for this article.

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How to cite this article: Zheng H, Li C, Hu J, Zeng L. Effects of acupuncture in the treatment of occipital neuralgia: A systematic review and meta-analysis. Medicine 2022;101:48(e31891).

Received: 26 September 2022 / Received in final form: 26 October 2022 / Accepted: 27 October 2022

http://dx.doi.org/10.1097/MD.0000000000031891

The third occipital nerve ascends from the cervical spine nerve and innervates the occipital region.[4] Therefore, it is difficult to develop diagnostic criteria for occipital neuralgia[5] due to its low prevalence.[6] The International Classification of Headache Disorders provides diagnostic criteria for occipital neuralgia, but these are of inadequate usefulness because they comprise subjective pain or sensory abnormalities in areas associated with the nerves in the occipital region, and there is still an absence of objective criteria.[7] The most recent management for occipital neuralgia often employs techniques based on only clinical knowledge or case studies. This is likely linked to the lack of randomized controlled trials for most therapeutic approaches.[7] Occipital neuralgia is typically managed conservatively with anti-inflammatory analgesics or anti-depressants, however occipital nerve block may be done if these methods are ineffective.[8] Occipital nerve blocks are performed after other headache management techniques have been unsuccessful,[9] including acupuncture, pharmacoacupuncture, acupotomy, and chuna (tuina) therapy for occipital neuralgia.[10] Acupuncture has been reported to be superior to medications in terms of pain treatment, with acupuncture at BL10, GV13, BL11, LU6, and SI3 being beneficial in reducing pain.[11,12] In addition to standard acupuncture, pharmacopuncture, fire needle acupuncture, and electroacupuncture may be utilized for the treatment of occipital neuralgia. For chronic disorders, the use of conventional drugs such as anti-inflammatory analgesics and antidepressants may be limited by their well-documented and well-known side effects.[13] Thus, there needs to be sufficient research to reveal the impact of non-systemic therapies on such people without the negative side effects of traditional pharmaceuticals.

Case studies and randomized controlled trials are the types of research currently accessible on the effects of acupuncture on occipital neuralgia. Acupuncture has been used to treat many cases of occipital neuralgia in Asia (China and Korea), but the results of these treatments have only been documented in a small number of published articles. The purpose of these studies[14,15] was to analyze the effectiveness of acupuncture as a complementary treatment for occipital neuralgia

2. Methods

The present study adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (2020 version) statement.[16]

2.1. Search strategy

A protocol of search strategies was prepared according to the PICOS principle,[17] and it was defined as follows: P (population): subjects with occipital neuralgia; I (intervention/exposure): effects of acupuncture in the treatment of occipital neuralgia; C (comparison): acupuncture compared to medication or acupuncture plus medication compared to medication in the treatment of occipital neuralgia; O (outcome): effective rate of treatment (Ratio of patients who improved completely or partially to those who did not improve was used to determine the effective rate. Improved or partially improved should express statistically significant reduction or absence of headache attacks); visual analog scale for pain; safety and S (study design): randomized clinical trials. First, we conducted a systematic search of China National Knowledge Infrastructure, OVID, Chinese Biomedical Literature Database, Embase, Cochrane Library, PubMed, Wanfang databases, and Google Scholar until July 2021, by using several keywords and related words for the acupuncture, occipital neuralgia, medication, effective rate, visual analog scale, as shown in Table 1. All included studies were checked and duplicates were removed (Fig. 1). In addition, the title and abstracts (for the studies which appeared as a result of the search in databases) were revised to eliminate studies that did not show any relationship to the effects of acupuncture in the treatment of occipital neuralgia. The remaining studies were examined for related information. This step is carried out independently by HZ and CL. In case of disagreement, the corresponding author LZ provided a final opinion. Search strategy has been included in supplementary file, Supplemental Digital Content, http://links.lww.com/MD/H969.

Inclusion criteria:

1. Human-related randomized clinical trials are allowed to be included, while the languish of the included study was not restricted to English.
2. Studies with diagnosed subjects with occipital neuralgia.
3. Studies with a 2-arm comparison between the interventional group (including acupuncture) and the control group (placebo or clinical treatment groups).

Exclusion criteria:

Studies were excluded from the current meta-analysis if their outcomes were not compatible with the indicated outcomes of the study such as studies that did not assess the visual analogue scale (VAS) scale for pain.

2.2. Screening

The following study-related and subject-related characteristics were used to condense the data onto a standard form (form for evaluation of data gathered from different studies): primary author's last name, study period, year of publication, country, region of studies, and study design; population type, the total number of subjects, demographic data, and clinical and treatment characteristics; qualitative and quantitative method of evaluation, infrastructural setting, and study design. Independently, HZ and CL gathered data from studies that met the inclusion criteria outlined above.[18] The corresponding author LZ gave the ultimate say in cases of disagreement. When the data from a particular study differed based on the assessment of the relationship of the effects of acupuncture in the treatment of occipital neuralgia, we extracted the data separately (in case we are using numbers while the included study presented the data as a percentage, authors convert the extracted data into numbers to be analyzed in the same way with other studies). Due to the potential for bias in these studies, JH, and LZ independently reviewed the quality of the methodology employed in the studies that were ultimately chosen for inclusion. The methods were evaluated using RoB 2, a revised version of the Cochrane risk-of-bias methodology for randomized trials. Corresponding author JH ensured the methodology's quality by resolving any disagreements that arose throughout the literature review through open conversation.[19] Each study was given a risk of bias classification based on how well it met the evaluation criteria: low, moderate, or high. If all quality criteria were met, the study was classified as having a low risk of bias; if some criteria were partially met, the study was classified as having a moderate risk of bias; and if none were met, the study was classified as having a high risk of bias. In the scenario where the 2 writers acquired different data for the same study, the original paper was reevaluated to resolve the discrepancy. Evidence for study results was assessed using the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) system. Instead of assigning grades to individual studies, GRADE assigns grades to a body of information based on the overall quality of that information. Quality, in the context of a systematic review, stands for the confidence with which we accept the effect estimates. Our confidence that the effect estimates are enough to back such a recommendation is what we mean when we talk about quality. When comparing the 2 types of studies, the quality of randomized trials is assumed to be higher, to begin with. According to GRADE, the term "quality" involves more

Table 1

Search strategy for each database.

Database	Search strategy
Pubmed	#1 "acupuncture"[MeSH Terms] OR "occipital neuralgia"[All Fields] OR "medication"[All Fields] #2 "acupuncture"[All Fields] OR "visual analogue scale"[All Fields] OR "effective rate"[All Fields] #3 #1 AND #2
Embase	"acupuncture"/exp OR "occipital neuralgia"/exp OR "medication"/exp #2 ' acupuncture '/exp OR "visual analogue scale"/exp OR "effective rate"/exp #3 #1 AND #2
Cochrane library	#1 (acupuncture):ti,ab,kw OR (occipital neuralgia):ti,ab,kw OR (medication):ti,ab,kw (Word variations have been searched) #2 (acupuncture):ti,ab,kw OR (visual analogue scale):ti,ab,kw OR (effective rate):ti,ab,kw (Word variations have been searched) #3 #1 AND #2

than the risk of bias, and as a result, it may be compromised by imprecision, inconsistency, indirectness of study outcomes, and publication bias.[20]

2.3. Statistical analysis

The odds ratio (OR) and the mean difference (MD) and the 95% confidence interval (CI) have been calculated using the dichotomous and contentious method with a random or fixed-effect model. The I^2 index was calculated and it was ranging from 0% to 100%; when the I^2 index was approximately 0%, 25%, 50%, and 75%, that specifies no, low, moderate, and high heterogeneity, respectively.[17] If the I^2 was > 50%, the random effect was used; if it was < 50%, the fixed effect was used. The subgroup analysis was done for any group of studies that share the same outcomes and the same methodology. A P-value < .05 was taken to indicate statistical significance between the categories. Egger regression test (publication bias is present if P = .05) and qualitative examination of funnel plots of logarithmic odds ratios vs their standard errors were used to evaluate the possibility of publication bias.[18] Two-tailed testing was used to determine all P values. Reviewer Manager, Version 5.3 was used for the statistical analysis and graphing (The Nordic Cochrane Centre, The Cochrane Collaboration, Copenhagen, Denmark).

3. Results

A total of 823 unique studies were identified, of which 19 studies (between 2005 and 2021) fulfilled the inclusion criteria and were included in this systematic review and meta-analysis.[11,12,21–37] Fifteen studies included 916 subjects with neuralgia at the start of the study; 462 of them were using acupuncture and 454 were given other medication as control. Four studies discussed the safety parameter for acupuncture compared with control including 159 for acupuncture group and 158 for control group. All studies evaluated the effects of acupuncture in the treatment of occipital neuralgia.

The study size ranged from 16 to 77 subjects with neuralgia at the start of the study. The details of the 19 studies are shown in Table 2. Five studies reported data stratified to the effect of acupuncture compared to medication on the effective rate of treatment, and 5 studies reported data stratified to the effect of acupuncture plus medication compared to medication on the effective rate of treatment 8 studies reported data stratified to the effect of acupuncture compared to medication on the visual analog scale. In addition, 4 studies evaluated the safety of acupuncture versus tradition medications.

Acupuncture had a significantly higher effective rate of treatment (OR, 5.40; 95% CI, 2.48 to 11.77, P < .001) with no heterogeneity (I^2 = 0%) compared to medication in treatment of occipital neuralgia as shown in Figure 2A. In addition, subgroup analysis of acupuncture impact on effective rate for studies used EX B2 point showed a significantly (P < .001) higher efficacy of acupuncture intervention, (OR, 6.411; 95% CI, 2.09 to 17.86) (Fig. 2B). Acupuncture plus medication had a significantly higher effective rate of treatment (OR, 3.96; 95% CI, 2.10 to 7.47, P < .001) with no heterogeneity (I^2 = 0%) compared to medication in the treatment of occipital neuralgia as shown in Figure 2C. Regarding the visual analogue, lower visual analogue scale (MD, –2.45; 95% CI, –2.69 to –2.21, P < .001) was related to the acupuncture group, with low heterogeneity (I^2 = 49%), as shown in Figure 3.

Four studies used for analysis for acupuncture safety, the acupuncture group showed a significantly (P = .003) lower number of adverse events compared with control group (medication), MD, 0.15, 95% CI, (0.04–0.54) with heterogeneity = 0% as shown in Figure 4.

Group age, ethnicity, and gender have not been taken into account in the pooled data due to a paucity of reports including these factors.

There was no evidence of publication bias (P = .88) based on a visual inspection of the funnel plot (Fig. 5) and quantitative measurement using the Egger regression test. However, due to their limited sample sizes, all of the included studies were deemed to be of poor methodological quality. There was no evidence of either selective reporting or incomplete outcome data in any of the studies or papers. For this reason, the GRADE assessment did not take into account the potential for publication bias, and the value assigned to this dimension was zero. The imprecision and the risk of bias in all analyses were elevated because the studies used had a small number of subjects and were not properly blinded. Group allocation was poorly structured, which increased the likelihood of bias in VAS and efficacy comparisons between acupuncture and medicine. Though the VAS analysis yielded a low level of evidence, the effective rate analysis yielded a moderate level of evidence since the effect size was bigger in the intervention groups. Due to the substantial effect size in the intervention groups relative to the control groups, 1 of the subgroup analyses comparing the efficacy of acupuncture with medicine revealed a moderate level of evidence. Evidence was weak in other subgroup analyses because of poorly conceived group allocation (Table 3). Due to the big effect size and very limited sample size, a single subgroup analysis carries a low level of proof. Despite a substantial effect size, the quality of evidence was low because of imprecision in the intervention groups when comparing the success rate between the combination acupuncture and medicine and medication-only groups.

The risk of bias is considered high for the included studies as shown in Figure 6. The risk of bias was deemed to be significant in the study by Gao et al 2016 because, even though the effective rate was measured using VAS based on the researchers' criteria, particular VAS data were not presented.

4. Discussion

Acupuncture had a beneficially lower visual analog scale, and a higher effective rate of treatment compared to medication in

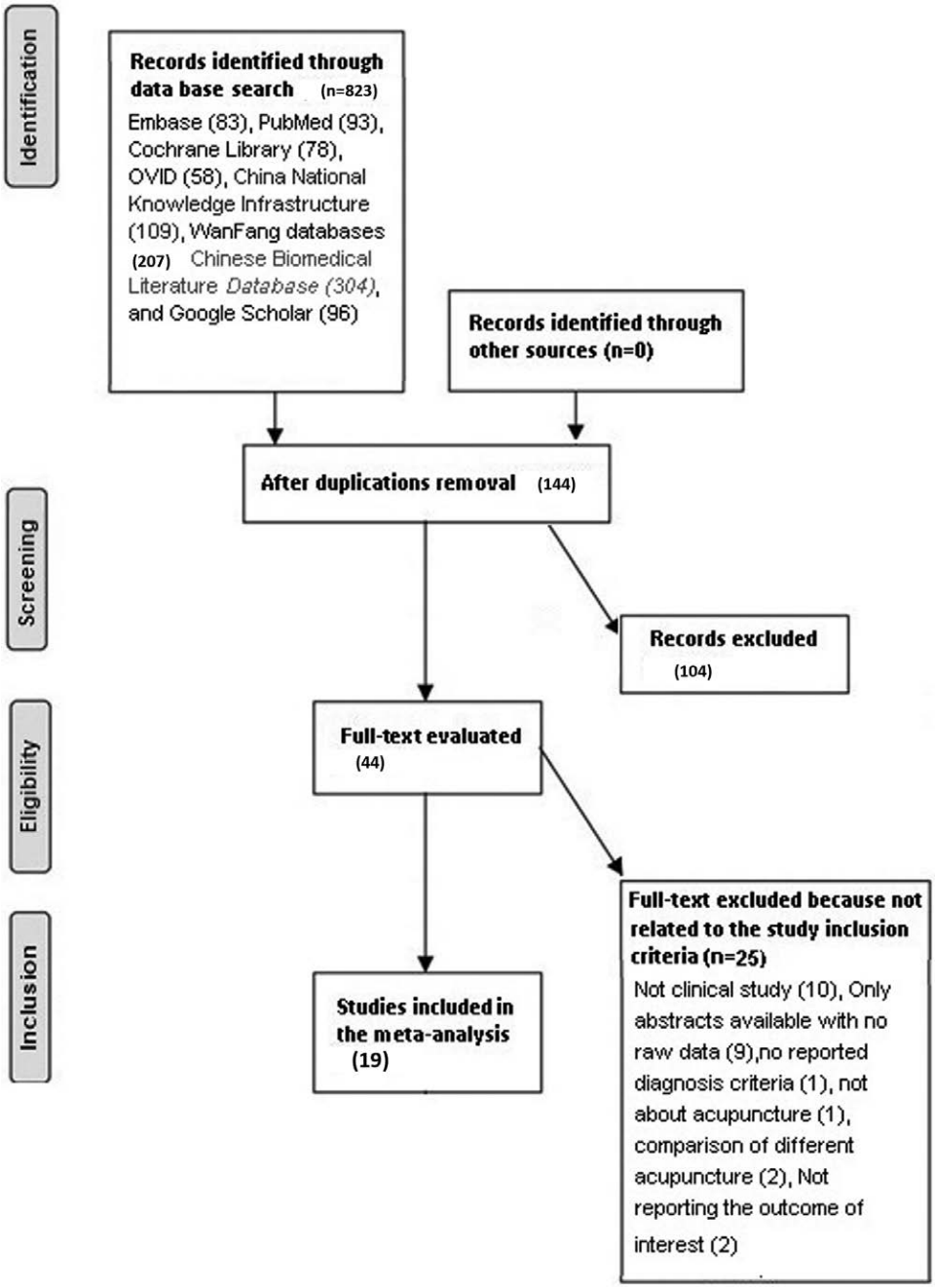

Figure 1. Schematic diagram of the study procedure.

the treatment of occipital neuralgia according to the included studies. However, several high-quality studies with large sample sizes are needed to produce a more powerful and sensitive conclusion. Most of the included studies in this field of therapy are of low quality and high risk of bias beside the small sample size of the recruited trials. As a result, the statistical findings did not produce enough evidence to support the significant impact of acupuncture. In addition, most of these studies were carried out in Asian countries and not widely applied in other cultures which may bias the findings of the current studies by reporting a lower degree of pain following acupuncture (placebo effect). Acupuncture plus medication had a significantly higher effective rate of treatment compared to medication in the treatment of occipital neuralgia..[11,12,21–37] Four studies used for analysis for acupuncture safety, the acupuncture group showed a significantly (P = .003) lower number of adverse events compared with control group (medication) which reflect the suitability of acupuncture compared with tradition medications.

All of the studies included in the systematic review and meta-analysis had small sample sizes (100 participants), so cautious consideration of the results is warranted. More research is needed to validate these findings or, at the very least, to dramatically impact the confidence in the effect assessment.

To evaluate the potential efficacy of acupuncture in people with occipital neuralgia, we conducted a systematic review and meta-analysis to carefully compile the evidence from the available research. Suboccipital pain that spreads to the occipital and temporal regions, and even the frontal lobes, is the hallmark of a condition known as occipital neuralgia. Following migraine and tension headaches in frequency is occipital neuralgia.[38] But it's the leading cause of headaches in both adults and kids. This is likely because of the challenges involved in accurately

Table 2

Characteristics of the selected studies for the meta-analysis.

Study	Treatment of neuralgia using acupuncture	Treatment of neuralgia using medication	Characteristics of included studies
Lin LF, 2005	35	32	Ashi points; 1-2 times a day for 3 d, 20 to 30 min; decreasing manipulation
Liu XQ, 2006	30	30	One time at GB 20 and EX-B2 a day for 6 d, 30 min; Reinforcing-decreasing manipulation
Li Y, 2007	34	34	Acupuncture treatment plus medication treatment
Changqing, 2008	30	42	Acupuncture treatment plus medication treatment
Cui YL, 2011	30	30	One time at GB 20 a day for 6 d, 30 min; Reinforcing-decreasing manipulation
Ning BL, 2012	30	30	GB 20 points; 1 to 2 times a day for 3 d, 20 to 30 min; decreasing manipulation
De, 2013	28	26	Acupuncture treatment plus medication treatment
Wenjuan, 2013	41	36	Acupuncture treatment plus medication treatment
Chen YX, 2014	37	37	EX-B2; 1-2 times a day for 3 d, 20 to 30 min; decreasing manipulation
Hong YB, 2014	30	27	GB 20 and Ashi points; 1-2 times a day for 3 d, 20 to 30 min; decreasing manipulation
Xu HF, 2014	32	30	Acupuncture treatment plus medication treatment
Li K, 2016	29	25	GB 20 and EX-B2 points; 1-2 times a day for 3 d, 20 to 30 min; decreasing manipulation
Gao LJ, 2016	30	30	One time at GB 20 and EX-B2 a day for 6 d, 30 min; Reinforcing-decreasing manipulation
Yang QR, 2016	38	37	One time at EX-B2a day for 6 d, 30 min; Reinforcing-decreasing manipulation
Kim, 2021	8	8	Ashi points; 1 to 2 times a day for 3 d, 20 to 30 min; decreasing manipulation
Chen S[33]	38	36	Measuring safety of interventions. Acupuncture versus Flunarizine
Qu X[34]	31	31	Measuring safety of interventions. Acupuncture versus Flunarizine
Zhang Y	31	33	Measuring safety of interventions. Acupuncture versus Flunarizine
Zheng S	59	58	Measuring safety of interventions. Acupuncture versus Flunarizine
Total 1233	**621**	**612**	

estimating the frequency and severity of the condition, as well as in determining its underlying pathology.[39,40] Some people with occipital neuralgia don't get well with medicine alone, so doctors also employ invasive procedures like Botox injections, occipital nerve blocks, pulsed radiofrequency, and, more recently, surgical procedures like neuro ablation or neurolysis.[41] A simpler and safer alternative to surgical therapy is an occipital nerve block.[41] Acupuncture, electroacupuncture, pharmacoacupuncture, moxibustion, and chuna manual treatment are some of the procedures used to treat occipital neuralgia in China and Korea, all of which have little to no side effects. Acupuncture, moxibustion, electroacupuncture, and chuna are currently used to handle large numbers of patients with occipital neuralgia by institutions in China and Korea. Patients who have tried conventional treatments without success typically seek help from Chinese and Korean NGOs. Studies have shown that acupuncture stimulates the release of opioid peptides including -endorphins, enkephalins, and dynorphins, which have analgesic effects through acting on the central nervous system.[42,43] The effectiveness of acupuncture for occipital neuralgia has been studied extensively through randomized controlled studies, while the underlying mechanism is still up for debate. The findings of this study add to the mounting body of evidence that demonstrates acupuncture to be a useful therapeutic method with few negative side effects. Even though evidence suggests acupuncture's therapeutic effects go beyond those of a placebo, many factors beyond the needles' direct effects contribute significantly. However, we must not overlook the mounting evidence that suggests placebo effects greatly alter the efficacy of any treatment.[44] Studies indicated that the concentrations of K+, Na+, and Ca + in neurons have been shown to alter after receiving acupuncture, suggesting that this treatment has an effect on nervous system function.[45] Besides, several hypotheses have been put out that stress the role of acupuncture in pain relief, such as its ability to induce an analgesic effect on the hypothalamic-pituitary-adrenal axis and the endogenous opioid system.[46]

The most popular acupuncture points were GB 20 and the ashi points, followed by EX-B2. Since GB 20 and EX-B2 are located in the occipital region, they are assumed to be often used because their distribution parallels that of the occipital nerves. Since GB20 is located in a depression between the insertions of the sternocleidomastoid and trapezius muscles below the occipital bone, it is intimately connected to the path of the nerves that cause occipital neuralgia and is thus the subject of numerous investigations. Because of its proximity to the origins of the greater and lesser occipital nerves, EX-B2 is thought to be functional. Since the ashi points are associated with the area of the body where the pain is felt, they have been widely employed for the treatment of occipital neuralgia. However, homogeneity was so low when we looked at the acupuncture locations utilized in

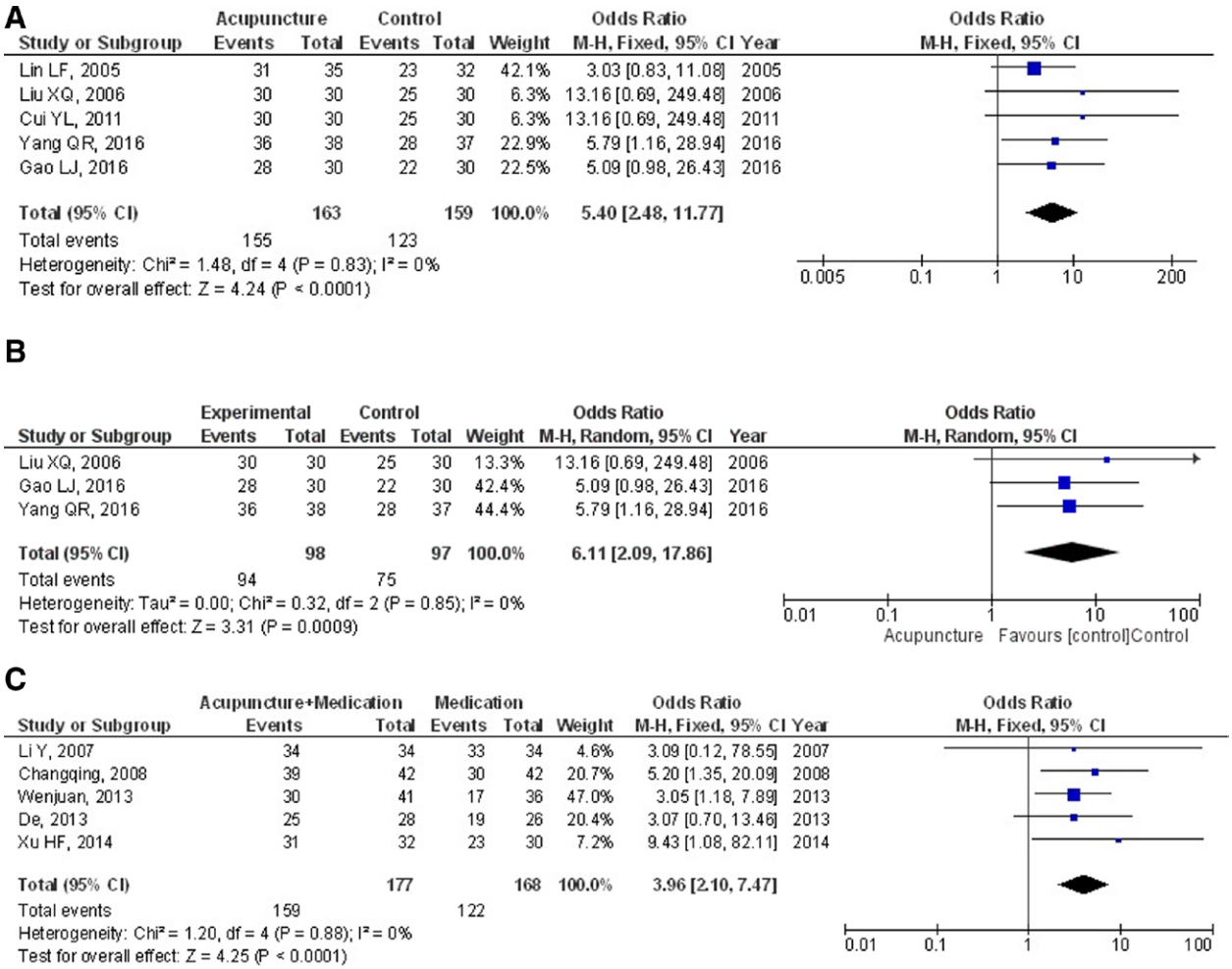

Figure 2. Forest plot of the effect of acupuncture on the effective rate of treatment in subjects with neuralgia compared to the medication group (A), acupuncture on EX B2 point (B), and acupuncture plus medication (C).

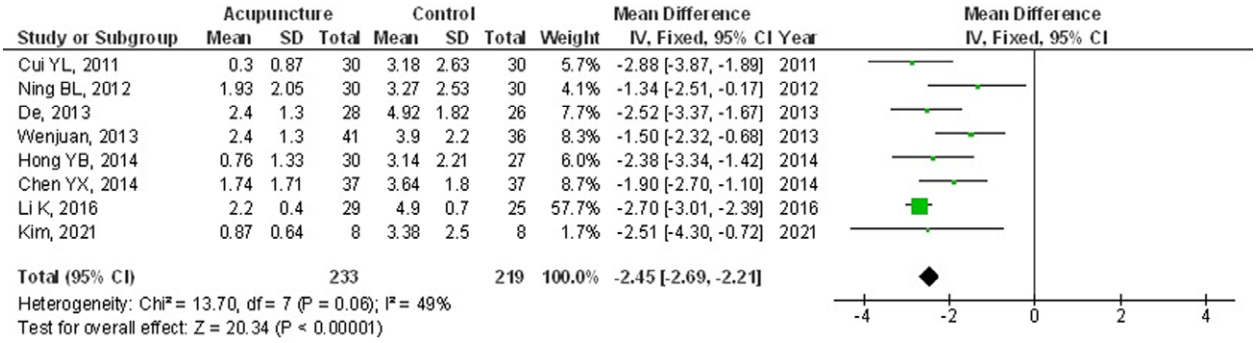

Figure 3. Forest plot of the effect of acupuncture on the visual analog scale in subjects with neuralgia compared to the medication group.

acupuncture-only intervention groups that we couldn't conduct the analysis.

This meta-analysis and systematic review demonstrated the association between acupuncture's efficacy and the treatment of occipital neuralgia. However, more research is required to confirm these possible correlations. Also, more research is required to show any kind of improvement in clinical practice. Similar results were found in other meta-analyses concerning the use of acupuncture for the treatment of occipital neuralgia.[44,47,48] Since no obvious answer was discovered, this needs to be looked into further. Since our systematic review and meta-analysis study could not explain whether these factors are connected with the results, well-designed studies are also needed to analyze them, such as the combination of different acupuncture points, the acupuncture type, age, gender, and ethnicity. While there are certainly plenty of doctors in the world,[49–51] even though acupuncture is being successfully used by both Chinese and Korean medical professionals to treat occipital neuralgia in clinical practice, there has been so little research done on the topic that we were only able to look at studies completed in China and Korea. Future research on acupuncture treatment for occipital neuralgia is thus required in other countries.

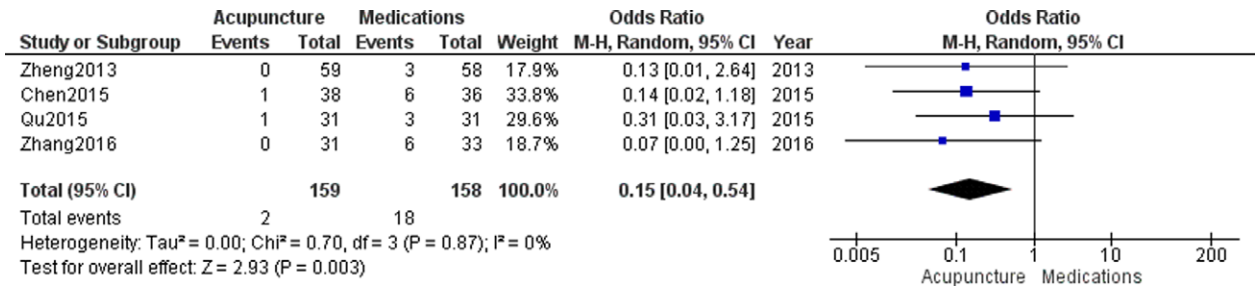

Figure 4. Forest plot of the effect of acupuncture on the incidence of adverse events in subjects with neuralgia compared to the medication group.

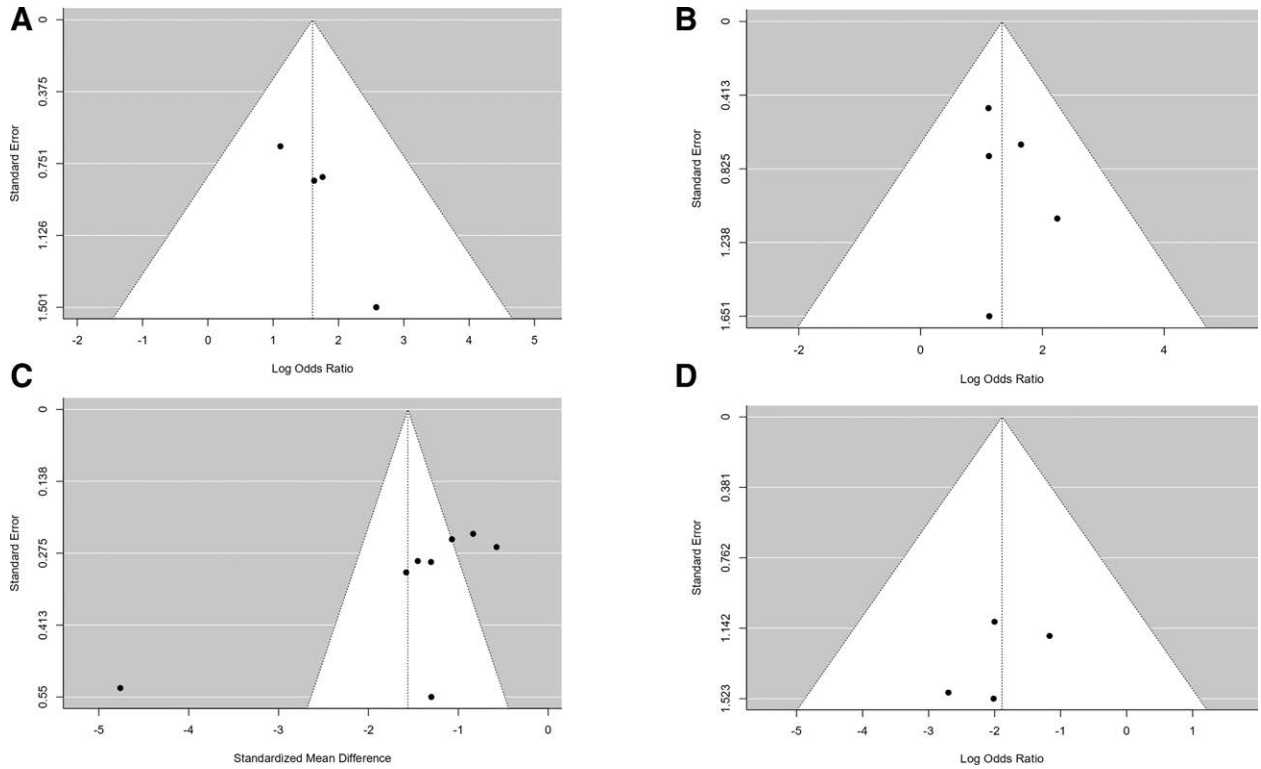

Figure 5. Funnel plot for effective rate for acupuncture versus control (A), acupuncture plus medication (B), VAS (C), and safety (D), VAS = visual analogue scale.

Table 3

The level of evidence of studies Outcomes.

Variable	Number of studies	Evidence level
Acupuncture versus Medication – VAS	8	Low
Acupuncture versus Medication – Effective rate	5	Moderate
Acupuncture (+ Medication) versus Medication Effective rate	5	Low

VAS = visual analogue scale.

4.1. Limitations

Since many of the studies discovered were not included in the systematic review and meta-analysis, there may be a selection bias in this study. But those studies didn't meet our inclusion criteria, therefore we couldn't include them in our meta-analysis. There was also no way to tell if the outcomes had anything to do with the acupuncture sites, the acupuncture type, the age, the gender, or the ethnicity of the patients. Research into the effectiveness of acupuncture for occipital neuralgia relied on data from other studies, which could introduce bias due to missing information. There was a small number of participants in each of the 15 studies used in the meta-analysis, with the total number of participants in the included studies being below 100. Other potential sources of bias were patients' age, gender, compliance, ethnicity, and nutritional status. The pooled effect could be inaccurate due to the presence of unreported research and gaps in data. Patients were using a wide variety of health care providers, treatment protocols, medication regimens, and administration timings. The fact that this meta-analysis was conducted on trials with inadequate blinding or few participants reduces the weight of the evidence it provides. There may have been a restriction in our methodology because we counted acupuncture points on both the left and right sides of the body as though there was no difference between them. Although acupuncture is used by certain Korean traditional medicine

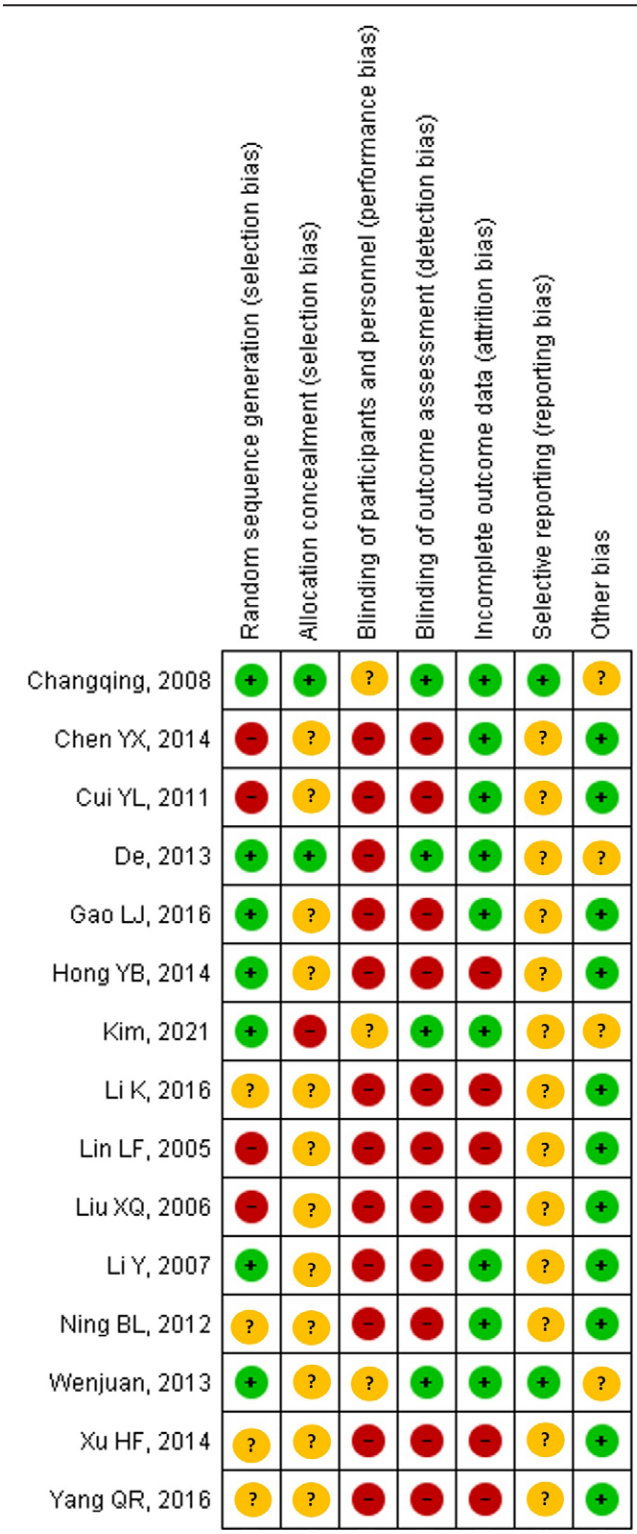

Figure 6. Risk of bias assessment.

doctors, there has been surprisingly little study of the topic outside of China, therefore our analysis of relevant literature from that country was limited. Hence, it is not possible to provide certain recommendations according to the recruited studies.

5. Conclusion

The analysis of results should be done with carefulness due to the low sample size in all of the included studies in the meta-analysis; recommending the requirement for more studies to confirm these findings or probably to significantly affect the confidence in the effect assessment. It is recommended that high-quality multicenter trials are needed to make the conclusion more accurate and to produce results with high sensitivity. Acupuncture alone or acupuncture plus medication had a beneficial effect on a higher effective rate of treatment compared to medication in the treatment of occipital neuralgia according to the included studies. In addition, acupuncture should a lower number of adverse events compared with traditional medications.

Author contributions

Conception and design: All authors; Administrative support: All authors; Provision of study materials or subjects: All authors; Collection and assembly of data: Huabin Zheng, Chong Li; Data analysis and interpretation: All authors; Manuscript writing: All authors; Final approval of manuscript: All authors; All authors have read and approved the manuscript.
Conceptualization: Huabin Zheng, Chong Li, Jike Hu, Li Zeng.
Data curation: Huabin Zheng, Chong Li, Jike Hu, Li Zeng.
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Funding acquisition: Chong Li.
Investigation: Chong Li.
Methodology: Huabin Zheng, Chong Li, Jike Hu, Li Zeng.
Software: Jike Hu, Li Zeng.
Visualization: Huabin Zheng.
Writing – original draft: Huabin Zheng, Chong Li, Jike Hu, Li Zeng.
Writing – review & editing: Huabin Zheng, Li Zeng.

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