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Meta-analysis to compare the efficacy of different acupuncture treatments for dry eye disease

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ADMINISTRATIVE INFORMATION

Support - National Natural Science Fund.

Review Stage at time of this submission - Formal screening of search results against eligibility criteria.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 17 August 2023 and was last updated on 17 August 2023.

INTRODUCTION

Review question / Objective population: People with dry eyes; intervention: acupuncture therapy; comparison: artificial tears; outcome: effective rate; study design: randomized controlled trials.

Condition being studied It is a condition characterized by dryness in the eyes, which can cause clinical symptoms such as eye allergies, bloodshot eyes, excessive eye discharge, visual fatigue, decreased vision, and blurred vision. Failure to treat it promptly can lead to complications such as corneal ulceration, keratitis, and lacrimal gland infection, resulting in vision loss.

METHODS

Participant or population People with dry eye disease.

Intervention Acupuncture.

Comparator Artificial tears.

Study designs to be included Randomized controlled trials (RCTs) and clinical controlled trials (CCTs) on acupuncture treatment for dry eye syndrome published until May 2023 were searched. English literature was searched using the US National Library of Medicine's biomedical literature retrieval system (PubMed), and Chinese literature was searched using the China National Knowledge Infrastructure Journal (CNKI). These large journals were searched to avoid missing any relevant literature on acupuncture treatment for dry eye syndrome. This process was conducted for the purpose of conducting a systematic review and meta-analysis.

Eligibility criteria Inclusion Criteria Study type: All published clinical controlled trials (CCTs) and randomized controlled trials (RCTs) on acupuncture treatment for dry eye syndrome.(2) Study population: Patients with dry eye syndrome symptoms, without restrictions based on age, region, race, or gender.(3) Intervention measures:

The experimental group received acupuncture treatment (including body acupuncture and electroacupuncture) or combined treatment of acupuncture and medication (with no restrictions on the type, ingredients, or names of the drugs), while the control group received medication treatment (with no restrictions on the type, ingredients, or names of the drugs). The types of drugs or treatments selected for the experimental group and the control group should remain consistent within the same study.(4) Baseline conditions: The post-treatment conditions of patients in the control group and the experimental group were observed, ensuring comparability.(5) Included literature should have data on total effective rate, tear secretion volume (SIT), and tear film breakup time (BUT).

Information sources English literature was searched using the US National Library of Medicine's biomedical literature retrieval system (PubMed), and Chinese literature was searched using the China National Knowledge Infrastructure Journal (CNKI).

Main outcome(s) Acupuncture has a more positive effect on the total effective rate, BUT SIT for dry eyeThe total effective rate of acupuncture treatment is higher.

Quality assessment / Risk of bias analysis The evaluation of literature quality and bias risk for all included studies was performed using Review Manager 5.3 statistical software. The quality of the included studies was assessed based on three levels of risk: low, unknown, and high.

Strategy of data synthesis Statistical methods employed Review Manager 5.3 statistical software for conducting Meta-analysis. Statistical heterogeneity test was performed, and if the included studies exhibited good homogeneity, i.e., $I^2 < 50\%$, then a fixed effects model was employed to combine the effect sizes. Conversely, a random effects model was used. RR was selected as the effect size indicator, and its 95% confidence interval was calculated. A significance level of $P < 0.05$ indicated a statistically significant difference. When $I^2 > 50\%$, the data posed risks of suppression, while $I^2 < 50\%$ indicated that this model should be applied. When $I^2 < 50\%$, and there was a large variation in I^2 values (one value approaching 0%), subgroup analysis was necessary. When $I^2 > 50\%$ and it was not feasible to continue, subgroup analysis was still conducted (with discussion if the sample size was small).

Subgroup analysis Since the exclusion conditions and inclusion conditions of the subjects were consistent, no other factors affected, and the outcome indicators were consistent, subgroup analysis and sensitivity analysis were not performed.

Sensitivity analysis Since the exclusion conditions and inclusion conditions of the subjects were consistent, no other factors affected, and the outcome indicators were consistent, subgroup analysis and sensitivity analysis were not performed.

Country(ies) involved Chinese.

Keywords Acupuncture, electroacupuncture, acupoint stimulation, moxibustion, dry eye syndrome.

Contributions of each author

Author 1 - Chen jiaqi.

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Author 3 - Li xiang.