INPLASY

An evidence map of acupuncture on pregnancy outcomes

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ADMINISTRATIVE INFORMATION

INTRODUCTION

Review question / Objective This evidence map amis to provide a summary of the influence of acupuncture on various pregnancy outcomes and identify gaps in the evidence.

Background Infertility refers to the inability to conceive after regular, unprotected sexual intercourse for one year (WHO, 2024). Assisted reproductive technology (ART) stands out as the primary choice for the majority of infertile couples, with more than 4 million procedures performed globally between 2008 and 2010 (Esteves et al., 2019). However, the success rate of ART is suboptimal. Additionally, many infertile couples often need to undergo repeated treatment cycles before achieving success, and the entire treatment process is financially burdensome (Collins et al., 2002). Moreover, the potential safety issues associated with ovulation stimulation for IVF cannot be overlooked (Engmann et al., 2008). Thus, new or adjuvant treatments are desirable.

Acupuncture, an important component of traditional Chinese medicine (TCM), has received great attention (Hwang et al., 2023; Wang et al., 2021). Clinical research on acupuncture treatment for infertility in various countries is increasing (Read et al., 2014). However, different studies of uneven methodological quality have resulted in conflicting conclusions, with some reviews suggesting that acupuncture is beneficial for pregnancy outcomes (Gao et al., 2020), while others hold the opposite opinion (Cheong et al., 2013).

Rationale The uniqueness of acupuncture and variability of studies, make a traditional systematic review and meta-analysis less than optimal. To the best of our knowledge, there are few comprehensive reviews of acupuncture for pregnancy outcomes that present a summary of the existing evidence available, except for one scoping review (Xiu et al., 2022). Nevertheless, it only included the population undergoing ART, and the conclusion of the live birth rate, which serves as the primary outcome for infertile couples

(Braakhekke et al., 2015), has not been reached. Additionally, in recent years, a large number of new studies (Zhang et al., 2023) have been emerging, which may result in changes to these conclusions. Therefore, an updated and more comprehensive review is needed. We used an evidence map, an emerging evidence synthesis and visualization tool, to offer an overview of expansive research areas (Miake-Lye et al., 2016), summarizing the existing clinical evidence for physicians and patients to make clinical decisions.

METHODS

Strategy of data synthesis   Three electronic databases, namely PubMed, Embase, and Cochrane Library were systematically searched from inception through November 2nd, 2023, and 4 Chinese electronic databases, namely China National Knowledge Infrastructure, Wanfang Database, China Biology Medicine disc, and VIP Database were systematically searched from inception through October 15th, 2023. Languages limited to Chinese and English.

Eligibility criteria Participants: Women of all ages who were receiving acupuncture treatment when they were not pregnant aimed to improve pregnancy outcomes, whether assisted reproductive technology was adopted or not.
Interventions: A variety of acupuncture approaches were available, including manual acupuncture, electroacupuncture, warm needle, fire needle, laser acupuncture, transcutaneous electrical acupoint stimulation (TEAS), auricular acupuncture, acupressure, and dry needling.
Comparator: Sham, placebo acupuncture, no intervention, standard Western medicine, standard care or usual care. If other treatments were involved, they must be the same in both groups.
Outcomes: The eligible studies reported at least one of the following outcomes: clinical pregnancy rate (CPR, i.e., the presence of at least one gestational sac or clear clinical indications of pregnancy confirmed on an ultrasound scan), live birth rate (LBR, i.e., a baby born alive after 24 weeks gestation), or ongoing pregnancy rate (OPR, i.e., a viable intrauterine pregnancy of at least 12 weeks duration confirmed on an ultrasound scan). Biochemical pregnancy rate (BPR, i.e., a positive urinary pregnancy test), miscarriage rate (MR, i.e., the ending of the pregnancy naturally before the 20th week) and adverse events (AE, e.g., pain, and bruising) can also be documented in these studies.
Timing: Any treatment duration and follow-up of included studies were eligible.
Setting: There were no restrictions on settings.

Study design: Randomized controlled trials (RCTs) and systematic reviews (SRs) of RCTs included in the meta-analysis were included.

Source of evidence screening and selection All citations were managed with EndNote X9 software (Clarivate, USA). One reviewer identified and removed the duplicates. Two reviewers independently screened the titles and abstracts according to predefined inclusion and exclusion criteria. In the phase of full-text screening, the same two reviewers removed the ineligible studies and recorded the reasons for exclusion. All the data were extracted by using standardized forms in Microsoft Excel 2016. Two reviewers independently extracted the data. Any disagreements were discussed and resolved by the team.

Data management   The spreadsheets were produced from the extracted data based on the different research design types. General information, including publication year and geographical information is presented in the charts. The characteristics of the studies, such as participants, interventions, controls, outcomes, and adverse effects are described in the tables. Moreover, bubble plots showed evidence of the distribution of the effect of acupuncture on outcomes.

Language restriction English and Chinese.

Country(ies) involved China.

Keywords acupuncture; pregnancy outcomes; evidence map; systematic review; clinical evidence.

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