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Acupuncture and Related Therapies for anxiety and depression in Diarrhoea-Predominant Irritable Bowel Syndrome(IBS-D): A Protocol for Systematic Review and Network Meta-Analysis

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Review question / Objective: Acupuncture-related therapies are effective Diarrhoea-Predominant Irritable Bowel Syndrome(IBS-D), therefore, our aim was to evaluate and rank the effect of different acupuncture-related therapies for the anxiety-depression status of IBS-D patients.

Eligibility criteria: The published randomized controlled trials (RCTs) of acupuncture-related therapies for the treatment of IBS-D, regardless of age and sex. Clear diagnostic criteria were required to confirm the diagnosis of IBS-D, Such as Rome I, Rome II, Rome III, Rome IV, and Chinese expert consensus. Interventions in the treatment group included various types of acupuncture-related therapies, including simple acupuncture (ACU), electroacupuncture (EA), warm acupuncture (WA), moxibustion (MOX), or a combination of acupuncture and drugs; the control group is anti-diarrheal or anti-spasmodic western medicine, or placebo, or comparison between various acupuncture-related therapies. The results of the report are required to include at least one of the following outcome indicators: (1) primary outcome: Hamilton anxiety rating scale(HAMA), hamilton depression rating scale(HAMD), self-rating anxiety scale (SAS), self-rating depression scale(SDS), secondary outcome: Response rate. The language of the publication was limited to Chinese or English.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 29 March 2022 and was last updated on 05 May 2022 (registration number INPLASY202230162).

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INTRODUCTION

Review question / Objective: Acupuncture-related therapies are effective Diarrhoea-Predominant Irritable Bowel Syndrome(

Condition being studied: Irritable bowel syndrome (IBS) is a type of functional bowel illness marked by abdominal pain, irregular bowel movements, and changes in stool consistency. According to epidemiological data, the global prevalence rate is around 15%. Likewise, the incidence is higher in females than in males. IBS is divided into four types based: irritable bowel syndrome with predominant diarrhea (IBS-D), irritable bowel syndrome with predominant constipation (IBS-C), irritable bowel syndrome with mixed bowel habits (IBS-M), and irritable bowel syndrome unclassified (IBS-U). Antispasmodics, antidiarrheal, prokinetic, and laxatives are among the most commonly prescribed medications for IBS. Although these medicines provide some relief from IBS symptoms, long-term usage can lead to some negative effects. Due to the lengthy duration and frequent episodes of IBS, patients typically experience a great deal of worry and melancholy. Similarly, a prior study found that IBS patients had much greater levels of anxiety and depression than the control group, perhaps exacerbating the symptoms. Thus, we should not only focus on treating symptoms, but also on improvements in the patients' psychological condition. However, psychological issues are complicated, and treating several symptoms with a single medicine is challenging. Antipsychotics routinely used in clinics may help with symptoms, but long-term usage has various risks (including medication resistance and dependency) and is not recommended. Acupuncture has a long history of being used to address digestive issues. Many clinical trials have shown that acupuncture is beneficial for IBS, and subsequent systematic reviews and meta-analyses have backed up this claim. Acupuncture can also help patients' psychological well-being, in addition to treating their IBS symptoms[15]. Numerous patients have turned to acupuncture as a complementary and alternative treatment. A range of acupuncture methods, including as simple acupuncture, electroacupuncture, warm acupuncture, and so on, have been used in a trials using acupuncture as the major

intervention for the treatment of IBS-D. Thus, we used a network meta-analysis(NMA) to evaluate the efficacy of the various acupuncture-related therapies for IBS-D, and ranking to determine the best interventions.

METHODS

Participant or population: The published randomized controlled trials (RCTs) of acupuncture-related therapies for the treatment of IBS-D, regardless of age and sex. Published studies on the psychological status of medical staff in the post-epidemic era, such as depression, anxiety, psychology, stress, insomnia, sleep disorders, etc.

Intervention: Interventions in the treatment group included various types of acupuncture-related therapies, including simple acupuncture (ACU), electroacupuncture (EA), warm acupuncture (WA), moxibustion (MOX), or a combination of acupuncture and drugs.

Comparator: The control group is anti-diarrheal or anti-spasmodic western medicine, or placebo, or comparison between various acupuncture-related therapies.

Study designs to be included: Randomized controlled trials (RCTs).

Eligibility criteria: The published randomized controlled trials (RCTs) of acupuncture-related therapies for the treatment of IBS-D, regardless of age and sex. Clear diagnostic criteria were required to confirm the diagnosis of IBS-D, Such as Rome I, Rome II, Rome III, Rome IV, and Chinese expert consensus. Interventions in the treatment group included various types of acupuncture-related therapies, including simple acupuncture (ACU), electroacupuncture (EA), warm acupuncture (WA), moxibustion (MOX), or a combination of acupuncture and drugs; the control group is anti-diarrheal or anti-spasmodic western medicine, or placebo, or comparison between various acupuncture-related therapies. The results

of the report are required to include at least one of the following outcome indicators: (1) primary outcome: Hamilton anxiety rating scale(HAMA), hamilton depression rating scale(HAMD), self-rating anxiety scale (SAS), self-rating depression scale(SDS), secondary outcome: Response rate. The language of the publication was limited to Chinese or English.

Information sources: Our literature search was performed from database establishment until January 15, 2022, including the following databases: PubMed, EMBASE, Cochrane Library, the China Biology Medicine (CBM), the China National Knowledge Infrastructure (CNKI), Wanfang Data, and the Chinese Scientific Journal Database (VIP). The search was conducted using a combination of medical subject headings (MeSH) terms and free words. In addition, the references included in the medical literature were retrospectively supplemented to obtain the associated references.

Main outcome(s): The results of the report are required to include at least one of the following outcome indicators: (1) primary outcome: Hamilton anxiety rating scale(HAMA), hamilton depression rating scale(HAMD), self-rating anxiety scale (SAS), self-rating depression scale(SDS), secondary outcome: Response rate.

Quality assessment / Risk of bias analysis: Our two researchers evaluated the included studies in accordance with the bias risk assessment tool recommended in the Cochrane Handbook 5.1.

Strategy of data synthesis: Statistical analysis was performed using RevMan5.4, Stata 15.0 and WinBUGS 1.4.3 software. SAS, SDS, HAMA, and HDMA scores were numerical variables, and the difference before and after treatment was used as the effect size; the response rate was categorically variable, risk ratio(RR) with 95% confidence intervals(CI) was used. In some research the change between baseline and after treatment failed to show, and the missing data were estimated using the formula from the Cochrane Handbook

5.1: Firstly, the standard pairwise meta-analysis was performed using the RavMan manager. Second, Stata15.0 was used to draw an NMA evidence relationship diagram. Then, WinBugs1.43 was run to set the number of iterations to 50 000 for NMA; 95% confidence interval (95% CI) of inconsistency factors (IF) was used to judge the consistency of the closed-loop. Next, Stata 15.0 program was applied to create funnel plots to determine whether there was evidence of small sample effects in the included studies. Finally, the surface under the cumulative ranking curve (SUCRA) was generated using Stata 15.0 to show the SUCRA scores for all interventions, with higher SUCRA scores implying higher treatment class.

Subgroup analysis: We perform subgroup analysis based on different outcome indicators.

Sensitivity analysis: We will try to exclude low-quality studies and use different statistical models to analyze the same data for sensitivity analysis.

Language: The language of the publication was limited to Chinese or English. Our two researchers evaluated the included studies in accordance with the bias risk assessment tool recommended in the Cochrane Handbook.

Country(ies) involved: China.

Keywords: Acupuncture; Diarrhoea-Predominant Irritable Bowel Syndrome; Anxiety; Depression; Network meta-analysis

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