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Acupoint Application for Stable Chronic Obstructive Pulmonary Disease：A systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

Support - Scientific and Technological Plan of Traditional Chinese Medicine in Zhejiang Province(No.2024ZL862).

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202570113

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 28 July 2025 and was last updated on 28 July 2025.

INTRODUCTION

Review question / Objective To systematically evaluate the efficacy and safety of acupoint application in the stable phase of chronic obstructive pulmonary disease (COPD).

Condition being studied Chronic obstructive pulmonary disease (COPD) is a common condition characterized by persistent respiratory symptoms and airflow limitation. Epidemiological studies indicate rising global incidence and mortality due to environmental and lifestyle changes, imposing significant socioeconomic burdens. COPD management emphasizes reducing acute exacerbations to preserve lung function and quality of life. While Western medicine excels in acute-phase treatment, it has limitations in early prevention and stable-phase control. Traditional medicine with a long history offers effective, convenient, low-risk alternatives for respiratory diseases.

Recent trials support acupoint application combined with baseline therapy for COPD, yet methodological flaws and small samples limit consensus. This evidence-based study adheres to PRISMA guidelines, integrating RCTs from the past five years to objectively evaluate the efficacy and safety of acupoint application for stable COPD, and aims to establish a reliable foundation for clinical decision-making.

METHODS

Participant or population Stable COPD patients meeting Chinese COPD Diagnosis and Treatment Guidelines (≥20 cases/group).

Intervention The experimental group received acupoint application combined with baseline therapy.

Comparator The control group received baseline therapy combined with or without a placebo.

Study designs to be included RCTs (blinded or non-blinded).

Eligibility criteria The following data or studies were excluded: ① Duplicate publications or overlapping data; ② Studies with missing data for key outcome measures that could not be obtained by contacting the authors; ③ Non-clinical study types, including case reports, expert opinions, reviews, meta-analyses, and basic research; ④ Comparative studies evaluating different acupoint application methods or different acupoint formula selections between experimental and control groups; ⑤ Studies with intervention measures incorporating other treatment methods.

Information sources Computer-based searches were conducted in the following databases: China National Knowledge Infrastructure (CNKI), Wanfang Data Knowledge Service Platform, VIP Chinese Sci-Tech Journals Database, Chinese Biomedical Literature Database (CBM), PubMed, Embase, and the Cochrane Library. The search timeframe was restricted to publications between January 2020 and April 2025. The key words in both Chinese or English terms include: "winter disease summer treatment ", "acupoint application", "plaster therapy", "medicated patch application", "herbal plaster", "dog days treatment" "COPD", “chronic obstructive pulmonary disease”, “pulmonary disease”, "stable period", "remission period", and "randomized controlled trials”.
Two reviewers independently screened the literature according to the predefined inclusion and exclusion criteria. Studies with unanimous agreement were included, while discrepancies were resolved through group discussion or consultation with a third researcher.

Main outcome(s) ① Efficacy rate; ② Forced vital capacity (FVC); ③ Forced expiratory volume in 1 second (FEV_1); ④ FEV_1/FVC ratio.

Quality assessment / Risk of bias analysis Methodological quality was assessed using the risk of bias tool recommended by the Cochrane Collaboration. The evaluation encompassed seven key domains: (1) the method and implementation of random sequence generation, (2) the mechanism of allocation concealment, (3) blinding of participants and research personnel, (4) blinding of outcome assessors, (5) completeness of outcome data, (6) potential for selective outcome reporting, and (7) other possible sources of bias. Each domain was independently evaluated by two researchers and categorized according to a three-tier classification system: "low risk" (indicating adequate measures were taken), "high risk" (indicating inadequate measures), or "unclear risk" (when insufficient information was available). Any discrepancies between the two researchers' assessments were resolved through cross-verification to ensure consistency in the methodological quality evaluation process.

Strategy of data synthesis Meta-analysis was performed using Review Manager 5.4, the official statistical software from Cochrane. For dichotomous variables, we calculated odds ratios (OR) with corresponding 95% confidence intervals (95% CI), while continuous variables were analyzed using mean differences (MD) with 95% CI.

Subgroup analysis Not covered.

Sensitivity analysis Heterogeneity among studies was assessed using the I^2 statistic: a fixed-effect model was employed when I^2 was less than 50%, whereas a random-effects model was applied when I^2 equaled or exceeded 50%, with subsequent exploration of heterogeneity sources. For studies demonstrating significant clinical heterogeneity that could not be reasonably explained, only a qualitative systematic description was conducted without quantitative pooling.

Country(ies) involved China.

Keywords Acupoint application; Pulmonary disease, chronic obstructive; Systematic review; Meta-analysis; GRADE.

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