INPLASY PROTOCOL

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None declared.

A comparison of efficacy and safety of complementary and alternative therapies for Lobar pneumonia in children - A protocol for systematic review and meta analysis

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Review question / Objective: **In recent years, due to the impact of COVID-19, people have formed a good habit of paying attention to hand hygiene and wearing masks when going out, and the number of children suffering from respiratory infections has decreased, which may affect the establishment and improvement of children's autoimmune function, and leading to a gradual increase in the incidence of lobar pneumonia in children, which affects children's physical health and physical and mental development, and even threaten the safety of children's life. The existing drugs for the treatment of lobar pneumonia in children have some limitations, some children still have symptoms such as cough and phlegm in later stages. Meanwhile, complementary and alternative therapies for lobar pneumonia in children play an important role in the treatment of the disease. This study will compare the efficacy and safety of various complementary and alternative therapies for lobar pneumonia in children through mesh meta-analysis, so as to provide a theoretical basis for clinical rational drug use.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 29 January 2022 and was last updated on 29 January 2022 (registration number INPLASY202210132).

INTRODUCTION

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children's autoimmune function, and leading to a gradual increase in the incidence of lobar pneumonia in children, which affects children's physical health and physical and mental development, and even threaten the safety of children's life. The existing drugs for the treatment of lobar pneumonia in children have some limitations, some children still have symptoms such as cough and phlegm in later stages. Meanwhile, complementary and alternative therapies for lobar pneumonia in children play an important role in the treatment of the disease. This study will compare the efficacy and safety of various complementary and alternative therapies for lobar pneumonia in children through mesh meta-analysis, so as to provide a theoretical basis for clinical rational drug use.

Condition being studied: A comprehensive and systematic search of randomized controlled trials(RCTs) of complementary and alternative therapies for lobar pneumonia in children, and the search time is up to January 2022. Literature search and data extraction were performed independently by two researchers, and the risk of bias was assessed. STATA15.0 and WinBUGS1.4.3 software will be used to process and further analyze the extracted data, and we will grade the evidence quality of the network meta-analysis (NMA).

METHODS

Search strategy: By searching Cochrane Central Register of Controlled Trials, Cochrane Library, PubMed, Web of Science, EMBASE, CNKI, Wanfang and other relevant databases, RCT studies of complementary and alternative therapies for children with lobar pneumonia were collected. Meanwhile, literature on lobar pneumonia in children included in the systematic review/meta-analysis was screened from the database establishment to January 2022. We will search by subject terms and free terms. If there is any disagreement during the study, it will be resolved through discussion or consultation with a third researcher, and the reasons for the disagreement will be explained.

Participant or population: (1) Children diagnosed with lobar pneumonia.(2) Regular use of one or more drugs for the treatment of lobar pneumonia in children. (3) The age is between 1 and 14 years old. (4) There are no restrictions on gender and race.

Intervention: The treatment group received complementary and alternative treatment of children lobar pneumonia in addition to conventional western medicine treatment. The basic intervention measures include acupoint application, cupping, acupuncture, massage and Traditional Chinese medicine. Interventions can be used alone or in combination. The control group was treated with other methods on the basis of conventional western medicine.

Comparator: The main outcome indicators were the duration of fever reduction, cough relief or disappearance time, the number of wheezing attacks, lung rales disappearance time; Secondary outcome indicators were length of hospital stay, time of inflammatory infiltration regression on lung X-ray films, total response rate, and incidence of adverse reactions during treatment, etc.

Study designs to be included: Randomized controlled trials (RCTS) and systematic reviews/meta-analyses of all relevant complementary and alternative therapies (Chinese herbal medicine, cupping, acupuncture, moxibustion, massage, acupoint application, etc.) for children with lobar pneumonia.

Eligibility criteria: Data were analyzed using RevMan5.3 statistical software provided by the Cochrane Collaboration. RR and OR were used for counting data. Weighted mean difference (WMD) or Mean Difference (MD) were used for measurement data, and 95% Confidence Interval (CI) was used as efficacy analysis statistics in both cases. When P>0.10 and I250%) the random effects model was used. Descriptive

analysis is used if data cannot be combined. An inverted funnel plot was drawn to determine whether publication bias existed.

Information sources: By searching Cochrane Central Register of Controlled Trials, Cochrane Library, PubMed, Web of Science, EMBASE, CNKI, Wanfang and other relevant databases, RCT studies of complementary and alternative therapies for children with lobar pneumonia were collected.

Main outcome(s): The main outcome indicators were the duration of fever reduction, cough relief or disappearance time, the number of wheezing attacks, lung rales disappearance time.

Additional outcome(s): Secondary outcome indicators were length of hospital stay, time of inflammatory infiltration regression on lung X-ray films, total response rate, and incidence of adverse reactions during treatment, etc.

Quality assessment / Risk of bias analysis: The risk of bias involved in the study will be assessed using the Cochrane Collaboration's Bias Risk Assessment tool.The quality of each trial will be independently assessed by two researchers, and any differences of opinion will be independently reviewed and explained by a third researcher. Factors such as sufficient random sequence generation, allocation hiding, blinding, data integrity, selective reporting and conflicts of interest should be considered in the evaluation. Due to the diversity of research design, there will inevitably be differences in the research process. If heterogeneity exists, subgroup analysis and sensitivity analysis will be performed.We will use GRADE to grade the quality of evidence, which is divided into four grades: high, medium, low and very low, and recommendation strength is divided into two grades: strong and weak. Assess the risk of bias, indirectness, inconsistency, inaccuracy, and publication bias.

Strategy of data synthesis: Data were analyzed using RevMan5.3 statistical software provided by the Cochrane Collaboration. RR and OR were used for counting data. Weighted mean difference (WMD) or Mean Difference (MD) were used for measurement data, and 95% Confidence Interval (CI) was used as efficacy analysis statistics in both cases. When P>0.10 and I250%) the random effects model was used. Descriptive analysis is used if data cannot be combined. An inverted funnel plot was drawn to determine whether publication bias existed.

Subgroup analysis: If there is sufficient evidence, we will conduct a subgroup analysis to explore the source of heterogeneity. The following factors will be used: age, surgical treatment, and course of treatment.

Sensitivity analysis: Subgroup analysis will be considered if sufficient data are available. Symptom improvement rates were used for sensitivity analysis to evaluate clinical similarity and methodology of the included studies to determine the reliability of the study results.

Language: None restriction.

Country(ies) involved: China.

Keywords: lobar pneumonia in children, Mycoplasmapneumoniae, complementary and alternative therapy, systematic review, net meta-analysis

Contributions of each author:
Author 1 - Guangyuan Jia - Conceptualization, Data curation, Methodology, Project administration, Statistical analysis, Writing – original draft.
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Author 4 - Leiming Xi - Methodology, Project administration, Search strategy, Software.

Author 5 - Baoqing Zhang - Conceptualization, Writing – review & editing.