INPLASY PROTOCOL

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Support: **Department of Pediatrics.**

Review Stage at time of this submission: **Preliminary searches.**

Conflicts of interest:
None declared.

A meta-analysis of the influence of Mycoplasma pneumoniae infection on the immune function of children with asthma

He, X[1]; Tian, W[2].

Review question / Objective: **To explore the impact of Mycoplasma pneumoniae infection on the immune function of children with asthma.**
Condition being studied: **Bronchial asthma is the most common chronic airway disease in children. Its incidence is increasing year by year, affecting children's physical and mental health, and causing a serious burden to the global society and families. Respiratory tract infection is one of the important causes of acute asthma attacks, and Mycoplasma pneumoniae is a child Common infectious pathogens can induce and aggravate the occurrence and development of asthma. The purpose of this study is to discuss the impact of Mycoplasma pneumoniae infection on childhood asthma from an immunological point of view.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 20 May 2021 and was last updated on 20 May 2021 (registration number INPLASY202150079).

INTRODUCTION

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METHODS

Search strategy: We will search the following databases from January 2000 to December 2020: PubMed, Embase, Web of Science, the Cochrane Library, China National Knowledge Infrastructure, the Chongqing VIP Chinese Science and Technology Periodical Database, Wanfang Database, and China Biomedical Literature Database.

Participant or population: Bronchial asthma in children under 18 years old.

Intervention: Mycoplasma pneumoniae infection.

Comparator: Childhood asthma without Mycoplasma pneumoniae infection Or Healthy children.

Study designs to be included: Case-control studies Or Cohort study.

Eligibility criteria: The study is considered qualified when the following criteria are met. (i) Cohort study or case-control study; (ii) The included research subjects need to meet the requirements of childhood asthma with Mycoplasma pneumoniae infection, not with other pathogen infections; (iii) Age between Newborn to 18 years-old.

Information sources: We will search the following databases from January 2000 to May 2021: PubMed, Embase, Web of Science, the Cochrane Library, China National Knowledge Infrastructure, the Chongqing VIP Chinese Science and Technology Periodical Database, Wanfang Database, and China Biomedical Literature Database.

Main outcome(s): Differences in various immune indicators between the study group and the control group, such as lymphocyte subsets, inflammatory cytokines.

Data management: NoteExpress.

Quality assessment / Risk of bias analysis: Newcastle-Ottawa Scale (NOS) was applied to examine the methodological quality of the included studies. NOS had: 4 items for study subjects (4 points), 1 item for inter-group comparability (2 points), and 3 items for result measurement (3 points), with a total score of 9.

Strategy of data synthesis: This meta-analysis will be conducted using the software STATA . A random-effects or fix-effects model will be used to estimate mean difference of each indicator and its risk factors with 95%CI. Heterogeneity will be assessed using a Chi-square test and I2 statistics (P-value <0.10 or I2 over 50% were defined as substantial heterogeneity). Publication bias will be estimated by the Begg's test and Egger's test, with P<0.1 indicating statistically significant.

Subgroup analysis: Subgroup analysis will be performed according to the sample situation in the included study.

Sensitivity analysis: Leave-one-out method will be used for sensitivity analyses by iteratively removing a study from the meta-analysis to assess the changes in overall effects.

Country(ies) involved: China.

Keywords: Bronchial asthma in children,Mycoplasma pneumoniae infection, Immune function, Influences.

Contributions of each author:

Author 1 - Xiaohua He - Principal Investigator, review of protocol and study proposal, data extraction and analysis, report writing.
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