INPLASY PROTOCOL

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None declared.

Efficacy and safety analysis of high-flow nasal cannula in children with bronchiolitis: a systematic review and meta-analysis

Cao, Q[1]; Xing, Y[2]; Zhong, L[3]; Wen, C[4]; Huang, H[5].

Review question / Objective: **We selected the article as RCT studies with patients younger than 16 years old. The experimental group was treated with HFNCs, and the control group was treated with nCPAP or conventional oxygen therapy, aiming to evaluate the efficacy and safety of HFNC in the treatment of infant bronchiolitis.**
Condition being studied: **Two reviewers performed independent evaluations of the titles and abstracts of the articles to determine whether they could be included in this study. If both reviewers agreed that a paper satisfied the criteria, the entire essay was evaluated. Disagreements about whether an article met the inclusion criteria were resolved through discussion. If an agreement could not be reached, a third reviewer would make the final decision. The reviewers contacted the authors of the seven selected articles for additional information required for this article. The Cochrane Risk of Bias Tool was used to assess the quality and risk of bias of the included articles.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 09 March 2022 and was last updated on 09 March 2022 (registration number INPLASY202230037).

INTRODUCTION

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METHODS

Participant or population: Children with bronchiolitis.

Intervention: High-flow nasal cannula (HFNC).

Comparator: Nasal continuous positive airway pressure (nCPAP) or the traditional standard oxygen therapy.

Study designs to be included: RCT.

Eligibility criteria: Failure rate of treatment\Change in respiratory rate\Improved arterial partial pressure of oxygen.

Information sources: PubMed, Web of Science, and major Chinese biomedical databases, including CNKI, GeenMedical, Wanfang, and Weipu.

Main outcome(s): Failure rate of treatment\Change in respiratory rate\Improved arterial partial pressure of oxygen.

Quality assessment / Risk of bias analysis: The Cochrane Risk of Bias Tool.

Strategy of data synthesis: Percentages and relative risk (RR) or mean difference (MD) with 95% confidence interval (CI) were used to describe the data. The I2 test was used to assess the heterogeneity; if the heterogeneity between studies was small (P>0.1, I2<50%), the fixed-effects model was used to merge the effect sizes; however, if the heterogeneity between studies was obvious (P≤0.1, I2≥50%), the random effects was is used to merge the effect size. Statistical analysis and graphs were performed using RevMan 5.30 software provided by Cochrane Collaboration.P≤0.05(two-sided), the difference was considered statistically significant and the test of sources of heterogeneity.A funnel plot was used to check the risk of publication bias.RevMan 5.30 software provided by Cochrane Collaboration.

Subgroup analysis: Subgroup analysis was performed according to nCPAP or conventional oxygen therapy in the control group.

Sensitivity analysis: Sensitivity analysis using RevMan 5.30 software provided by the Cochrane Collaboration, by removing one of the articles, the change in effect size reflects the change in sensitivity.

Country(ies) involved: China.

Keywords: High-flow nasal catheters (HFNCs); bronchiolitis; infant bronchiolitis; meta-analysis.

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