INPLASY PROTOCOL

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Conflicts of interest:
None declared.

Short versus longer course of antibiotic therapy for non-severe community acquired pneumonia in the pediatric population: A systematic review and meta-analysis

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Review question / Objective: **What are the effects of a short antibiotic course compared to longer antibiotic course in treating community acquired pneumonia in children aged 2 months to 18 years in an outpatient setting?**
Condition being studied: **Pneumonia is a lower respiratory tract infection that may be caused by either a bacterial or viral pathogen. It is a common illness among children.**
Information sources: **Databases that will be searched include MEDLINE, Ovid Embase, and the Cochrane Library. We will also search through reference lists of eligible studies and review articles. Search dates will be from first available date of the database to date of search. We will re-run the search prior to the final analysis.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 15 June 2022 and was last updated on 15 June 2022 (registration number INPLASY202260067).

INTRODUCTION

Review question / Objective: **What are the effects of a short antibiotic course compared to longer antibiotic course in treating community acquired pneumonia in children aged 2 months to 18 years in an outpatient setting?**

Rationale: **Community – acquired pneumonia is a significant cause of morbidity and mortality among children in both developed and developing countries. There lacks consensus on treatment duration with majority of children managed as an outpatient. Standard practice has**

been to treat for 7 to 14 days, though variation in practice exists.

Condition being studied: Pneumonia is a lower respiratory tract infection that may be caused by either a bacterial or viral pathogen. It is a common illness among children.

METHODS

Participant or population: The study will include children between the ages of 2 months to 18 years who are managed as an outpatient and have a diagnosis of community-acquired pneumonia. We will exclude adults, children with severe community-acquired pneumonia (ie. severe tachypnea or work of breathing, low oxygen saturation), hospitalized children, children who have a severe underlying chronic illness, or having already received a different antibiotic 48 hours prior to enrolment.

Intervention: The intervention will be a shorter duration by at least 2 days or more of an oral antibiotic.

Comparator: Same oral antibiotic but of a longer duration (by at least 2 days or more).

Study designs to be included: We will include randomized trials.

Eligibility criteria: We will exclude non-randomised trials, trials conducted in adult patients only, and trials comparing non-oral regimens (i.e., Intravenous or intramuscular). Children must be managed with oral antibiotics in an outpatient settings. Studies conducted on hospitalized children only will be excluded.

Information sources: Databases that will be searched include MEDLINE, Ovid Embase, and the Cochrane Library. We will also search through reference lists of eligible studies and review articles. Search dates will be from first available date of the database to date of search. We will re-run the search prior to the final analysis.

Main outcome(s): 1. Clinical cure defined as: a. Improvement in clinical symptoms (defervescence, improvement in dyspnea and work of breathing) and/or b. Not requiring additional intervention including extra antibiotics or admission to hospital.

Additional outcome(s): 1. Adherence to study medications measured by number of missed taking the target antibiotic, or how it was reported in the eligible studies 2. Recurrence of presumed bacterial respiratory illness within 30 days of enrollment 3. Mortality attributable to pneumonia occurring within one month of initiating treatment 4. Adverse effects related to the antibiotics including rash, diarrhea, thrush, or anaphylaxis, etc.

Quality assessment / Risk of bias analysis: The reviewers will independently assess risk of biases for each study using the Revised Cochrane risk of bias 2.0 tool for randomized trials.

Strategy of data synthesis: Meta-analysis will be planned to perform if there is no clinical and methodological heterogeneity.

Subgroup analysis: The following subgroup analyses will be conducted: 1. age sub-categories 2. antibiotic class 3. high income versus low to middle income country.

Sensitivity analysis: None.

Country(ies) involved: Canada.

Keywords: systematic review, pediatric, pneumonia, antibiotic.

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