

## ABSTRACT

**BACKGROUND :** Asthma is a chronic disease characterized by inflammation of the airways. The prevalence of childhood asthma is increasing and is expected to exceed 400 million children by the year 2025. Childhood asthma is still approached as an extension of adult asthma in clinical practice in the lack of high-quality data from interventional studies conducted in children and adolescents. Exacerbations of childhood asthma are characterized by sudden deterioration of the respiratory symptoms and can be life threatening. For that reason, it is imperative to improve the management of pediatric asthma exacerbations. Several clinical studies evaluate safety and clinical effectiveness of pharmacologic treatments for severe exacerbations of pediatric asthma.

**OBJECTIVES :** We aim to review the international literature to identify pharmacological interventions that have been tested as potential treatments for severe exacerbations of childhood bronchial asthma,. Promising pharmacological interventions will be selected and further evaluated in individual meta-analyses.

**METHODS :** We will systematically search the Medline, Pubmed, EMBASE, and Cochrane libraries to identify relevant randomized controlled clinical trials and observational comparative effectiveness studies. A two-stage approach will be followed, and we will use the standard methodology recommended by the Cochrane Collaboration and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Firstly, a broad search strategy is aimed to identify any clinical research studies evaluating the management of severe asthma exacerbations at children. Next, the safety and clinical effectiveness of promising drugs will be evaluated in individual meta-analyses.. For risk of bias evaluation, we will use the Cochrane risk of bias tool for randomized clinical trials and the RELEVANT tool (Real Life EVIDence AssessmeNt Tool) for observational studies.