



Advertising Disclaimer »

Pediatrics

February 2017

Inhaled Corticosteroids and Respiratory Infections in Children With Asthma: A Meta-analysis

Cristine Cazeiro, Cristina Silva, Susana Mayer, Vanessa Mariany, Claire Elizabeth Wainwright, Linjie Zhang

[Article](#)
[Figures & Data](#)
[Supplemental](#)
[Info & Metrics](#)
[Comments](#)

[Download PDF](#)

Abstract

CONTEXT: Inhaled corticosteroids (ICS) are associated with an increased risk of pneumonia in adult patients with chronic obstructive pulmonary disease.

OBJECTIVE: To assess the association between ICS use and risk of pneumonia and other respiratory infections in children with asthma.

DATA SOURCES: We searched PubMed from inception until May 2015. We also searched clinicaltrials.gov and databases of pharmaceutical manufacturers.

STUDY SELECTION: We selected randomized trials that compared ICS with placebo for at least 4 weeks in children with asthma.

DATA EXTRACTION: We included 39 trials, of which 31 trials with 11 615 patients contributed data to meta-analyses.

RESULTS: The incidence of pneumonia was 0.58% (44/7465) in the ICS group and 1.51% (63/4150) in the placebo group. The meta-analysis of 9 trials that revealed at least 1 event of pneumonia revealed a reduced risk

of pneumonia in patients taking ICS (risk ratio [RR]: 0.65; 95% confidence interval [CI]: 0.44 to 0.94). Using risk difference as effect measure, the meta-analysis including all 31 trials revealed no significant difference in the risk of pneumonia between the ICS and placebo groups (risk difference: -0.1%; 95% CI: -0.3% to 0.2%). No significant association was found between ICS and risk of pharyngitis (RR: 1.01; 95% CI: 0.87 to 1.18), otitis media (RR: 1.07; 95% CI: 0.83 to 1.37), and sinusitis (RR: 0.89; 95% CI: 0.76 to 1.05).

LIMITATIONS: Lack of clearly defined criteria for respiratory infections and possible publication bias.

CONCLUSIONS: Regular use of ICS may not increase the risk of pneumonia or other respiratory infections in children with asthma.

Accepted December 2, 2016.

- Copyright © 2017 by the American Academy of Pediatrics

[View Full Text](#)

Log in using your username and password

Username	Password
<input type="button" value="Log in"/>	

[Forgot](#) your user name or password?

Log in through your institution

via OpenAthens

You may be able to gain access using your login credentials for your institution. Contact your library if you do not have a username and password.

[Pay Per Article](#) - You may access this article (from the computer you are currently using) for 2 days for US\$25.00

[Regain Access](#) - You can regain access to a recent Pay per Article purchase if your access period has not yet expired.

[Offer Reprints](#)

We recommend

Inhaled corticosteroids may be superior to systemic corticosteroids in children with moderate-to-severe acute asthma
Tamara T. Perry et al., *Pediatrics*, 2004

Inhaled Steroids Linked to Risk of Diabetes
Diabetes In Control, 2010

COPD Symptoms, Definition, Treatment, And Medications For COPD Exacerbation

Doubling the Dose of Inhaled Corticosteroid to Prevent Asthma Exacerbations: Randomised Controlled Trial

Elinor Simons et al., Pediatrics, 2005

LOW-DOSE INHALED CORTICOSTEROID THERAPY AND RISK OF EMERGENCY DEPARTMENT VISITS FOR ASTHMA

Elizabeth C. Matsui et al., Pediatrics, 2003

Survey of adrenal crisis associated with inhaled corticosteroids in the united kingdom

John M. Kelso, Pediatrics, 2004

Inhaled Corticosteroids and Growth of Airway Function in Asthmatic Children

Wanda Phipatanakul, Pediatrics, 2005

Maysa Odeh, PharmD, RxEconsult,

Inhaled corticosteroids: Insufficient vitamin D and calcium supplementation | SAGE Open Med

Univadis (UK), 2016

Medications for Chronic Asthma

PracticeUpdate, 2016

Effect of Inhaled Corticosteroids on IOP In People With Open-Angle Glaucoma and Ocular Hypertension

PracticeUpdate, 2016

Powered by

◀ Previous

Next ▶

Every Hospital Is Unique
So Are the Needs of Your Smallest Patients



Advertising Disclaimer »

◀ Previous

Next ▶

✉ Email

🔒 Permissions

📣 Alerts

🌐 Citation Tools

 Share

 Print

 PDF

[Table of Contents](#)

[Early Release](#)

[Current Issue](#)

[Past Issue](#)

[AAP Policy & Collections](#)

[Editorial Board](#)

[Overview](#)

[Editorial Policies](#)

[Open Access](#)

[Author Guidelines](#)

[Reviewer Guidelines](#)

[Submit My Manuscript](#)

[Subjects](#)

[Allergy/Immunology](#) 

[Allergy/Immunology](#) 

[Asthma](#) 

[Pulmonology](#) 

[Asthma](#) 

[Pulmonology](#) 