



Cochrane
Library

Cochrane Database of Systematic Reviews

Increased versus stable doses of inhaled corticosteroids for exacerbations of chronic asthma in adults and children (Review)

Quon BS, FitzGerald JM, Lemière C, Shahidi N, Ducharme FM

Quon BS, FitzGerald JM, Lemière C, Shahidi N, Ducharme FM.

Increased versus stable doses of inhaled corticosteroids for exacerbations of chronic asthma in adults and children.

Cochrane Database of Systematic Reviews 2010, Issue 12. Art. No.: CD007524.

DOI: [10.1002/14651858.CD007524.pub3](https://doi.org/10.1002/14651858.CD007524.pub3).

www.cochranelibrary.com

Increased versus stable doses of inhaled corticosteroids for exacerbations of chronic asthma in adults and children (Review)

Copyright © 2010 The Cochrane Collaboration. Published by John Wiley & Sons, Ltd.

WILEY

[Intervention Review]

Increased versus stable doses of inhaled corticosteroids for exacerbations of chronic asthma in adults and children

Bradley S Quon¹, J. Mark FitzGerald², Catherine Lemièr³, Neal Shahidi⁴, Francine M Ducharme⁵

¹Medicine, University of British Columbia, Vancouver, Canada. ²Vancouver General Hospital, Vancouver, Canada. ³Chest Department, Hôpital du Sacré-Coeur de Montréal, Montreal, Canada. ⁴Division of Respiratory, University of British Columbia, Vancouver, Canada. ⁵Research Centre, CHU Sainte-Justine and the Department of Pediatrics, University of Montreal, Montreal, Canada

Contact address: Francine M Ducharme, Research Centre, CHU Sainte-Justine and the Department of Pediatrics, University of Montreal, 3175 Cote Sainte-Catherine, Montreal, Québec, H3T 1C5, Canada. francine.m.ducharme@umontreal.ca.

Editorial group: Cochrane Airways Group.

Publication status and date: Edited (no change to conclusions), comment added to review, published in Issue 12, 2010.

Citation: Quon BS, FitzGerald JM, Lemièr C, Shahidi N, Ducharme FM. Increased versus stable doses of inhaled corticosteroids for exacerbations of chronic asthma in adults and children. *Cochrane Database of Systematic Reviews* 2010, Issue 12. Art. No.: CD007524. DOI: [10.1002/14651858.CD007524.pub3](https://doi.org/10.1002/14651858.CD007524.pub3).

Copyright © 2010 The Cochrane Collaboration. Published by John Wiley & Sons, Ltd.

ABSTRACT

Background

Written action plans providing guidance in the early treatment of asthma exacerbations have traditionally advocated doubling of inhaled corticosteroids (ICS) as one of the first steps in treatment.

Objectives

To compare the clinical effectiveness of increasing the dose of ICS versus keeping the usual maintenance dose as part of a patient-initiated action plan at the onset of asthma exacerbations.

Search methods

We searched the Cochrane Airways Group Specialised Register (last search October 2009) which is derived from searches of CENTRAL, MEDLINE, EMBASE and CINAHL, as well as handsearched respiratory journals and meeting abstracts.

Selection criteria

Randomised controlled trials (RCTs) that compared the strategy of increasing the daily dose of ICS to continuing the same ICS dose in the home management of asthma exacerbations in children or adults with persistent asthma on daily maintenance ICS.

Data collection and analysis

Two review authors independently selected trials, assessed quality and extracted data. We contacted authors of RCTs for additional information.

Main results

Five RCTs (four parallel-group and one cross-over) involving a total of 1250 patients (28 children and 1222 adults) with mild to moderate asthma were included. The mean daily baseline ICS dose was 555 mcg (range 200 mcg to 795 mcg) and the mean daily ICS dose achieved following increase was 1520 mcg (range 1000 mcg to 2075 mcg), in CFC beclomethasone dipropionate equivalents. Three parallel-group studies in adults (two doubling and one quadrupling; mean achieved daily dose of 1695 mcg with a range of 1420 to 2075 mcg), involving 1080 patients contributed data to the primary outcome. There was no significant reduction in the need for rescue oral corticosteroids when patients were randomised to the increased ICS compared to stable maintenance dose groups (OR 0.85, 95% CI 0.58 to 1.26). There was

no significant difference in the overall risk of non-serious adverse events associated with the increased ICS dose strategy, but the wide confidence interval prevents a firm conclusion. No serious adverse events were reported.

Authors' conclusions

There is very little evidence from trials in children. In adults with asthma on daily maintenance ICS, a self-initiated ICS increase to 1000 to 2000 mcg/day at the onset of an exacerbation is not associated with a statistically significant reduction in the risk of exacerbations requiring rescue oral corticosteroids. More research is needed to assess the effectiveness of increased ICS doses at the onset of asthma exacerbations (particularly in children).

PLAIN LANGUAGE SUMMARY

Increasing the dose of inhaled corticosteroid versus continuing usual maintenance dose to treat exacerbations in adults and children with chronic asthma

The strategy of doubling the dose of inhaled corticosteroids for the early treatment of an asthma exacerbation as part of an action plan has been advocated by previous asthma consensus guidelines. We identified five trials involving 1250 patients which compared the effect of patient-initiated increase in the dose of inhaled corticosteroid with continuing the usual maintenance dose during asthma exacerbations. Patients assigned to the increased inhaled corticosteroid dose strategy did not have significantly less need for rescue oral corticosteroids than patients continuing with their usual maintenance dose of inhaled corticosteroid. Similarly other outcomes failed to show superiority of this strategy. The increased dose strategy was not associated with an increased risk of adverse effects. More research is needed to assess the effectiveness of increased ICS doses at the onset of asthma exacerbations (particularly in children).