

# Bronchodilators or inhaled corticosteroids for postinfectious cough

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## Clinical question

Do bronchodilators or inhaled corticosteroids (ICS) help postinfectious cough (PIC) in adults without asthma?

## Bottom line

Data are limited, with results from only 2 ICS RCTs and 1 bronchodilator RCT. In adults, PIC scores may improve about 50% when taking placebo and about 5% to 10% more with ICS over 2 weeks. Ipratropium-salbutamol may resolve cough in more patients than will placebo at day 10 (37% vs 69% have ongoing cough) but most patients (>80%, regardless of treatment) will have cough resolution by day 20.

## Evidence

Differences were statistically significant unless indicated.

- For ICS versus placebo: In 4 systematic reviews of treatments for persistent cough (4 to 9 RCTs, 335 to 750 patients) interpretation of results was limited by inclusion of RCTs with acute (<3 weeks)<sup>1,2</sup> and chronic (>8 weeks)<sup>2,3</sup> cough, and multiple drug classes.<sup>4</sup>
  - The most useful systematic review<sup>2</sup> (2 RCTs, 163 patients, 3 to 8 weeks) of mainly subacute cough found ICS had a standard mean difference of 0.42 versus placebo. This means that at 2 weeks placebo improved cough scores by roughly 50% to 56% and ICS improved scores about 2% to 13% more.
  - The largest RCT<sup>5</sup> (133 patients) reported additional outcomes (eg, days off work, nocturnal awakenings, adverse effects), but there was no difference in treatments.
    - The proportion of non-smokers with more than 50% cough improvement was 81% versus 54% (placebo) (number needed to treat=4). There was no improvement among smokers.
    - Limitations: Not all patients had PIC; the study was industry funded.
- Bronchodilators versus placebo: One RCT<sup>6</sup> of 92 patients (cough duration 3 to 4 weeks) using a combination of nebulized salbutamol and ipratropium found the proportion with ongoing cough at day 10 was 37% versus 69% placebo (number needed to treat=3). There was no difference at day 20 (both >80% resolved).
  - Limitations: Studies were small, used nonvalidated cough scores, and recorded multiple outcomes.

## Context

- Postinfectious cough persists 3 to 8 weeks after an acute respiratory illness.<sup>7</sup>
- In an RCT<sup>8</sup> of beclomethasone versus placebo, it is likely patients did not have true PIC (subacute). Yet, ICS improved 3 of 6 outcomes on device-measured cough (no difference in patient-reported symptoms).
- Guidelines suggest considering a trial of inhaled ipratropium or, if refractory, ICS.<sup>9</sup>
- The RCTs did not include patients with COVID-19.

## Implementation

Upper airway cough syndrome (ie, postnasal drip) can cause PIC. If suspected, intranasal steroids can be tried. Other causes of subacute cough include exacerbation of asthma or chronic obstructive pulmonary disease, gastroesophageal reflux disease, and medications.<sup>7</sup> Red flags are hemoptysis, smoking, prominent dyspnea, hoarseness, systemic symptoms, dysphagia, recurrent pneumonia, and abnormal physical examination findings.<sup>7</sup> Tuberculosis should be considered in high-risk populations.<sup>7</sup> Follow-up via a telephone call or an in-person appointment should occur 4 to 6 weeks after the initial evaluation to ensure cough resolution.<sup>7</sup>

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**Competing interests**  
None declared

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