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THE LANCET

Budesonide-formoterol reliever therapy versus maintenance budesonide plus terbutaline reliever therapy in adults with mild to moderate asthma (PRACTICAL): a 52-week, open-label, multicentre, superiority, randomised controlled trial

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Summary

Background

In adults with mild asthma, a combination of an inhaled corticosteroid with a fast-onset long-acting β-agonist (LABA) used as reliever monotherapy reduces severe exacerbations compared with short-acting β-agonist (SABA) reliever therapy. We investigated the efficacy of combination budesonide–formoterol reliever therapy compared with maintenance budesonide plus as-needed terbutaline.

Methods

We did a 52-week, open-label, parallel-group, multicentre, superiority, randomised controlled trial at 15 primary care or hospital-based clinical trials units and primary care practices in New Zealand. Participants were adults aged 18–75 years with a self-reported doctor's diagnosis of asthma who were using SABA for symptom relief with or without maintenance low to moderate doses of inhaled corticosteroids in the previous 12 weeks. We randomly assigned participants (1:1) to either reliever therapy with budesonide 200 μg–formoterol 6 μg Turbuhaler (one inhalation as needed for relief of symptoms) or maintenance budesonide 200 μg Turbuhaler (one inhalation twice daily) plus terbutaline 250 μg Turbuhaler (two inhalations as needed). Participants and investigators were not masked to group assignment; the statistician was masked for analysis of the primary outcome. Six study visits were scheduled: randomisation, and weeks 4, 16, 28, 40, and 52. The primary outcome was the number of

severe exacerbations per patient per year analysed by intention to treat (severe exacerbations defined as use of systemic corticosteroids for at least 3 days because of asthma, or admission to hospital or an emergency department visit because of asthma requiring systemic corticosteroids). Safety analyses included all participants who had received at least one dose of study treatment. This trial is registered with the Australian New Zealand Clinical Trials Registry, number ACTRN12616000377437.

Findings

Between May 4, 2016, and Dec 22, 2017, we assigned 890 participants to treatment and included 885 eligible participants in the analysis: 437 assigned to budesonide–formoterol as needed and 448 to budesonide maintenance plus terbutaline as needed. Severe exacerbations per patient per year were lower with as-needed budesonide–formoterol than with maintenance budesonide plus terbutaline as needed (absolute rate per patient per year 0·119 *vs* 0·172; relative rate 0·69, 95% CI 0·48–1·00; p=0·049). Nasopharyngitis was the most common adverse event in both groups, occurring in 154 (35%) of 440 patients receiving as-needed budesonide–formoterol and 144 (32%) of 448 receiving maintenance budesonide plus terbutaline as needed.

Interpretation

In adults with mild to moderate asthma, budesonide–formoterol used as needed for symptom relief was more effective at preventing severe exacerbations than maintenance low-dose budesonide plus as-needed terbutaline. The findings support the 2019 Global Initiative for Asthma recommendation that inhaled corticosteroid–formoterol reliever therapy is an alternative regimen to daily low-dose inhaled corticosteroid for patients with mild asthma.

Funding

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