



Budesonide Bests COVID-19

CLINICAL QUESTION

What is the effect of inhaled steroids on length of illness, emergency room visits and hospital admissions in outpatients with COVID-19 infections?

BOTTOM LINE

Based on 2 open-label trials, higher risk outpatients (≥ 1 comorbidity) with suspected or confirmed COVID-19 infection may benefit from inhaled budesonide 800ug BID for 14 days. Compared to usual care, budesonide shortened the time to recovery (12 versus 15 days), increased the proportion of patients recovering by day 14 (32% versus 22%) and reduced need for health services (54% versus 59%). COVID-19 evidence is evolving and further research will help clarify/confirm benefits/harms.

EVIDENCE

- Results statistically significant unless otherwise noted.
- Randomized controlled trial (RCT)¹ of 1856 symptomatic COVID-19 positive patients aged ≥ 65 , or ≥ 50 with co-morbidities. Randomized to budesonide 800ug inhaled BID x14 days or usual care.

- Mean age 64, ~80% had comorbidities (most common: hypertension and diabetes), symptom onset 6 days prior.
 - First recovery day: ~12 days budesonide versus ~15 days usual care, difference ~3 days.
 - Hospital admission or death: 6.8% budesonide versus 8.8%, difference 2%.
 - Result not statistically different but analysis suggests 96% probability that benefit was real.
- Other outcomes improved with budesonide:
 - Percent recovered by 14 days: 32% versus 22% [number needed to treat (NNT)=10], contact with health services: 54% versus 59% (NNT=18).
- RCT²: Budesonide 800ug inhaled BID (for duration of symptoms, median 7 days) or usual care in 146 (generally, younger/lower risk) adults with COVID-19 symptoms (94% confirmed):
 - Mean age 45, median one comorbidity/patient, symptom onset 3 days prior
 - Urgent care or higher visit: 3% budesonide versus 15%, NNT=9.
 - Symptoms present at 14 days: 10% budesonide versus 30%, NNT=5.
- Limitations: Open label,^{1,2} no placebo arm,^{1,2} 1% fully vaccinated,¹ adverse effect poorly reported.¹

CONTEXT

- Systemic steroids reduce mortality in hospitalized patients with COVID-19.
 - Greatest benefit in mechanically ventilated patients and no benefit in hospitalized not requiring oxygen.³
- Guidelines for management of COVID-19 outpatients variable: Inhaled budesonide not mentioned,⁴ not recommending for/against,⁵ or included as potential option.⁶
- Budesonide 400ug inhaler: ~\$110 per unit.⁷

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