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v i r t u a l

Inhaled budesonide in the treatment of early COVID-19 illness: a randomised controlled trial

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Background

Multiple early hospital cohorts of coronavirus disease 2019 (COVID-19) showed that patients with chronic respiratory disease were significantly under-represented. We hypothesised that the widespread use of inhaled glucocorticoids was responsible for this finding and tested if inhaled glucocorticoids would be an effective treatment for early COVID-19 illness.

Methods

We conducted a randomised, open label trial of inhaled budesonide, compared to usual care, in adults within 7 days of the onset of mild Covid-19 symptoms. The primary end point was COVID-19-related urgent care visit, emergency department assessment or hospitalisation. The trial was stopped early after independent statistical review concluded that study outcome would not change with further participant enrolment.

Results

146 patients underwent randomisation. For the per protocol population (n=139), the primary outcome occurred in 10 participants and 1 participant in the usual care and budesonide arms respectively (difference in proportion 0.131, p=0.004). The number needed to treat with inhaled budesonide to reduce COVID-19 deterioration was 8. Clinical recovery was 1 day shorter in the budesonide arm compared to the usual care arm (median of 7 days versus 8 days respectively, logrank test p=0.007). Proportion of days with a fever and proportion of participants with at least 1 day of fever was lower in the budesonide arm. Fewer participants randomised to budesonide had persistent symptoms at day 14 and day 28 compared to participants receiving usual care.

Conclusion

Early administration of inhaled budesonide reduced the likelihood of needing urgent medical care and reduced time to recovery following early COVID-19 infection.

