Cochrane Database of Systematic Reviews - - Cochrane Review

Inhaled corticosteroids for cystic fibrosis

Code: CD001915 **Year:** 2019 **Date:** 2012 - updated: 19 NOV 2018 **Author:** Balfour-Lynn Ian M

Study design (if review, criteria of inclusion for studies)

Randomised or quasi-randomised trials, published and unpublished, comparing ICS to placebo or standard treatment in individuals with CF.

List of included studies (13)

Austrian Trial 1995; Belgian Trial 2007; Canadian Trial 1997; CF WISE 2006; Danish Trial 1983; Danish Trial 1997; Dutch Trial 1995; German Trial 1999; Irish Trial 1995; Swiss Trial 1996; Turkish Trial 2008; UK Trial 1996; UK Trial 1997

Participants

People with CF who had been diagnosed by clinical criteria and sweat or genetic testing, or both, regardless of age or clinical severity.

Interventions

Inhaled corticosteroid

Outcome measures

Average patient days in hospital; Average patient days on antibiotics; Change in per cent predicted FVC; Change in per cent predicted FVC (withdrawal study); Growth velocity; Growth velocity (withdrawal study); Mean absolute FEV1; Per cent predicted FEV1; Per cent predicted FEV1 (withdrawal study)

Main results

The searches identified 35 citations, of which 27 (representing 13 trials) were eligible for inclusion. These 13 trials reported the use of inhaled corticosteroids in 525 people with cystic fibrosis aged between 6 and 55 years. One was a withdrawal trial in 171 individuals who were already taking inhaled corticosteroids. Methodological quality and risk of bias were difficult to assess from published information. Objective measures of airway function were reported in most trials but were often incomplete and reported at different time points. We found no difference in forced expiratory volume in one second (FEV1) or forced vital capacity (FVC) % predicted in any of the trials, although the quality of the evidence was low due to risks of bias within the included trials and low participant numbers. We are uncertain whether inhaled corticosteroids result in an improvement in exercise tolerance, bronchial hyperreactivity or exacerbations as the quality of the evidence was very low. Data from one trial suggested that inhaled corticosteroids may make little or no difference to quality of life (lowâ€•quality evidence). Three trials reported adverse effects, but the quality of the evidence is low and so we are uncertain whether inhaled corticosteroids increase the risk of adverse effects. However, one study did show that growth was adversely affected by high doses of inhaled corticosteroids.

Authors' conclusions

Evidence from these trials is of low to very low quality and insufficient to establish whether inhaled corticosteroids are beneficial in cystic fibrosis, but withdrawal in those already taking them has been shown to be safe. There is some evidence they may cause harm in terms of growth. It has not been established whether longâ€•term use is beneficial in reducing lung inflammation, which should improve survival, but it is unlikely this will be proven conclusively in a randomised controlled trial.

https://doi.org//10.1002/14651858.CD001915.pub6

See also

Balfourâ€•Lynn IM, Welch K, Smith S. Inhaled corticosteroids for cystic fibrosis. Cochrane Database of Systematic Reviews 2019, Issue 7. Art. No.: CD001915. DOI: 10.1002/14651858.CD001915.pub6.

Keywords

Adolescent; Adult; Budesonide; Hormones; Inhalation OR nebulised; pharmacological_intervention; Pregnenediones; Respiratory Tract

Diseases; Steroids; Anti-Inflammatory Agents;