Cochrane Database of Systematic Reviews - - Cochrane Review

Oxygen therapy for cystic fibrosis

Code: CD003884 **Year:** 2013 **Date:** 2009 - updated: 12 AUG 2013 **Author:** Elphick Heather E

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

Randomized or quasi-randomized controlled trials comparing oxygen, administered at any concentration, by any route, in people with documented CF for any time period.

List of included studies (11)

Barker 1998; Falk 2006; Gozal 1997; Marcus 1992; McKone 2002; Milross 2001b; Nixon 1990; Parsons 1996; Shah 1997; Spier 1984; Zinman 1989

Participants

Children and adults with CF diagnosed clinically and by sweat or genetic testing including all ages and all degrees of severity.

Interventions

Oxygen therapy

Outcome measures

Change in FEV1; Change in FVC; Change in gas exchange during exercise; Change in gas exchange during sleep; Change in PaCO2; Change in PaO2; Changes in right heart function; Exercise parameters after submaximal exercise; Exercise parameters during maximal exercise; Nutritional status: change in % ideal body weight for height; Quality of life: regular attendance at school or work; Sleep parameters; Survival

Main results

This review includes 11 published studies (172 participants); only one examined long-term oxygen therapy (28 participants). There was no statistically significant improvement in survival, lung, or cardiac health. There was an improvement in regular attendance at school or work in those receiving oxygen therapy at 6 and 12 months. Four studies examined the effect of oxygen supplementation during sleep by polysomnography. Although oxygenation improved, mild hypercapnia was noted. Participants fell asleep quicker and spent a reduced percentage of total sleep time in rapid eye movement sleep, but there were no demonstrable improvements in qualitative sleep parameters. Six studies evaluated oxygen supplementation during exercise. Again, oxygenation improved, but mild hypercapnia resulted. Participants receiving oxygen therapy were able to exercise for a significantly longer duration during exercise. Other exercise parameters were not altered by the use of oxygen.

Authors' conclusions

There are no published data to guide the prescription of chronic oxygen supplementation to people with advanced lung disease due to CF. Short-term oxygen therapy during sleep and exercise improves oxygenation but is associated with modest and probably clinically inconsequential hypercapnia. There are improvements in exercise duration, time to fall asleep and regular attendance at school or work. There is a need for larger, well-designed clinical trials to assess the benefits of long-term oxygen therapy in people with CF administered continuously or during exercise or sleep or both. However, we do not expect any new research to be undertaken in this area any time soon and do not plan to update this review again until any new evidence does become available.

http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD003884.pub4/abstract

See also

Elphick HE, Mallory G. Oxygen therapy for cystic fibrosis. Cochrane Database of Systematic Reviews 2009, Issue 11 Art. No.: CD003884. doi: 10.1002/14651858.CD003884.pub4.

Keywords

non pharmacological intervention - devices OR physiotherapy; Oxygen; Respiratory Insufficiency; Respiratory Tract Diseases;