primary studies - published RCT

Effect of smaller droplet size of dornase alfa on lung function in mild cystic fibrosis. Dornase Alfa Nebulizer Group.

Code: PM9516090 **Year:** 1998 **Date:** 1998 **Author:** Geller DE

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

Randomised, open-label, parallel study. Multicentre.

Participants

CF patients (n = 749) with mild lung disease (baseline forced vital capacity less than or equal to70% predicted)

Interventions

dornase alfa 2.5 mg daily for 2 weeks by one of two nebulizer systems: 1) the Medic-Aid Durable SideStream nebulizer powered by the MobilAire Compressor (SS/MA) producing a droplet size with a mass median aerodynamic diameter (MMAD) of 2.1 microm; or 2) the Hudson T Up-draft nebulizer with a DeVilbiss Pulmo-Aide compressor (HT/PA) with an MMAD of 4.9 microm

Outcome measures

Respiratory function (FEV1, FVC and FEF25-75) at 1 and 14 days. Adverse events. Serum levels of dornase alfa at baseline and within 4 hours of the final dose.

Main results

Dornase alfa delivered by both nebulizer systems produced small but statistically significant improvements in pulmonary function compared with baseline. There was a trend (P = 0.06) toward greater improvement in forced expiratory flow in 1 s in the SS/MA group (4.3%) compared with the HT/PA group (2.5%).

Authors' conclusions

These results indicate that the short-term spirometric response to dornase alfa is influenced in part by the physical characteristics of the aerosol in patients with mild lung disease. We speculate that this may be true for other therapeutic aerosols, and it appears that localization of disease in the lung plays a role in the response to inhaled agents.

http://www.ncbi.nlm.nih.gov/pubmed/9516090

See also

Pediatr Pulmonol. 1998 Feb;25(2):83-7.

Keywords

Adolescent; Adult; Child; Deoxyribonuclease; Drug Administration Schedule; Airway clearance drugs -expectorants- mucolytic-mucociliary-; Inhalation OR nebulised; nebuliser; non pharmacological intervention - devices OR physiotherapy; pharmacological_intervention; Respiratory System Agents; Dornase alpha; Pulmozyme;