primary studies - published RCT

Reduction of sputum Pseudomonas aeruginosa density by antibiotics improves lung function in cystic fibrosis more than do bronchodilators and chest physiotherapy alone.

Code: PM2109558 **Year:** 1990 **Date:** 1990 **Author:** Regelmann WE

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

double-blind placebo-controlled trial

Participants

patients with cystic fibrosis (CF) and moderate obstructive lung disease in pulmonary exacerbation

Interventions

determine the contribution of antibiotic-mediated reduction in sputum bacterial density to clinical improvement. For the first 4 days of study, all patients received bronchodilating aerosols and chest physiotherapy but no antibiotics. During the next 14 days patients were stratified by their initial FVC and randomized to receive either parenteral tobramycin and ticarcillin (n = 7) or placebo (n = 5), in addition to continued aerosol and chest physiotherapy

Outcome measures

FEV1, FVC, FEF25-75, P.aeruginosa colony forming units (CFU)/gr sputum

Main results

During the first 4 days patients showed significant improvement in mean FVC, FEV1, and maximal midexpiratory flow rate (FEF25-75). In 12 of 13 trials, the patients showed no significant increases in the density of Pseudomonas aeruginosa during these first 4 days. In the remaining trial, the patient had a significant rise in the density of P. aeruginosa and was assigned to the antibiotic group. During the next 14 days of therapy, the antibiotic group showed significantly (p less than 0.01) greater reductions in log10 colony-forming units (cfu) of P. aeruginosa per gram of sputum and greater increases in FVC, FEV1, and FEF25-75 than did the placebo group. The degree of decrease in log10 cfu P. aeruginosa/g sputum correlated significantly (p less than 0.001) with the degree of improvement in FVC, FEV1, and FEF25-75.

http://www.mrw.interscience.wiley.com/cochrane/clcentral/articles/638/CN-00612638/frame.html

See also

The American review of respiratory disease YR: 1990 VL: 141 NO: 4 Pt 1

Keywords

Adult; Anti-Bacterial Agents; Bacterial Infections; Bronchodilator Agents; Drug Administration Schedule; Infection; Inhalation OR nebulised; non pharmacological intervention - devices OR physiotherapy; Penicillins; pharmacological_intervention; Pseudomonas aeruginosa; Pseudomonas; Respiratory Tract Diseases; Respiratory Tract Infections; Ticarcillin; Tobramycin; Aminoglycosides;