primary studies - published RCT

Acute and long-term amiloride inhalation in cystic fibrosis lung disease. A rational approach to cystic fibrosis therapy.

Code: PM2310093 **Year:** 1990 **Date:** 1990 **Author:** App EM

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

1st part: randomized trial 2nd part: 3-wk trial

Participants

1st part: 23 patients with CF 2nd part: 6 of the patients

Interventions

1st part: inhalation of normal saline or amiloride (10(-3) M), a sodium transport blocker 2nd part: amiloride inhalation therapy

Outcome measures

Mucociliary clearance (MC) and cough clearance (CC) were determined with a gamma camera that traced the movement of 99mTc-labeled, hardened erythrocytes over a 1-h period after the patients inhaled these particles as an aerosol. Before and after each investigation pulmonary function tests (PFT) and blood pressure (BP) were measured. Sputum thread formation was measured by means of a filancemeter.

Main results

MC increased significantly (p less than 0.001) after acute amiloride inhalation (bronchial deposition, 0.07 mg amiloride) compared with that in the saline control. CC also increased, but not as much as MC. After 3 wk of amiloride inhalation (2 times a day) clearance values (both MC and CC) were markedly enhanced (p less than 0.01); after a similar period of saline inhalation, clearance values were not different from baseline. Sputum filance values also decreased significantly after amiloride inhalation. There were no adverse effects of the amiloride inhalation compared with saline.

Authors' conclusions

amiloride inhalation administered as a single dose or as long-term therapy is able to increase MC and CC in CF airways and that the effect of 10(-3) M amiloride inhalation on MC lasts at least 40 min.

http://www.mrw.interscience.wiley.com/cochrane/clcentral/articles/139/CN-00066139/frame.html

See also

Am Rev Respir Dis. 1990 Mar;141(3):605-12.

Keywords

Adolescent; Adult; Amiloride; Bacterial Infections; Child; Infection; Inhalation OR nebulised; pharmacological_intervention; Pneumonia; Respiratory Tract Infections; Airway clearance drugs -expectorants- mucolytic- mucociliary-; ENaC antagonists - Sodium Channel Blockers; Respiratory System Agents; Respiratory Tract Diseases;