primary studies - published RCT

Absorptive clearance of DTPA as an aerosol-based biomarker in the cystic fibrosis airway.

Code: PM19717485 **Year:** 2010 **Date:** 2010 **Author:** Corcoran TE

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

RCT

Participants

10 CF and 11 control subjects

Interventions

Subjects inhaled an aerosol containing nonabsorbable technetium-99m sulfur colloid (Tc-SC) particles and In-DTPA.

Outcome measures

absorptive clearance rate of DTPA

Main results

Tc-SC clearance from the lung is exclusively mucociliary, while In-DTPA is cleared by both absorption and mucociliary clearance. The difference between the In-DTPA and Tc-SC clearance rates estimates In-DTPA absorption. Tc-SC (mucociliary) clearance was similar in central and peripheral zones in CF and non-CF lungs. Total In-DTPA clearance was increased in both zones in CF lungs. The absorptive component of In-DTPA clearance was increased in the airway-dominated central lung zones in CF (42% x h(-1) versus 32% x h(-1), p = 0.03). The absorption of In-DTPA is increased in the CF airway.

Authors' conclusions

Further study is needed to understand the relative roles of fluid absorption, inflammation and other mechanisms potentially affecting epithelial permeability and DTPA absorption.

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See also

Eur Respir J. 2010 Apr;35(4):781-6. Epub 2009 Aug 28.

Keywords

Adolescent; Adult; Biomarker; Inhalation OR nebulised;