primary studies - published, non RCT

Lung Clearance Index and Structural Lung Disease on Computed Tomography in Early Cystic Fibrosis.

Code: PM26359952 **Year:** 2016 **Date:** 2016 **Author:** Ramsey KA

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

observational diagnostic study

Participants

42 infants (ages 0-2 yr), 39 preschool children (ages 3-6 yr), and 38 school-age children (7-16 yr) with CF and 72 healthy control subjects.

Interventions

Lung clearance index was assessed before chest computed tomography.

Outcome measures

Scans were evaluated for CF-related structural lung disease using the Perth-Rotterdam Annotated Grid Morphometric Analysis for Cystic Fibrosis quantitative outcome measure.

Main results

In infants with CF, lung clearance index is insensitive to structural disease (kappa = -0.03 [95% confidence interval, -0.05 to 0.16]). In preschool children with CF, lung clearance index correlates with total disease extent. In school-age children, lung clearance index correlates with extent of total disease, bronchiectasis, and air trapping. In preschool and school-age children, lung clearance index has a good positive predictive value (83-86%) but a poor negative predictive value (50-55%) to detect the presence of bronchiectasis.

Authors' conclusions

These data suggest that lung clearance index may be a useful surveillance tool to monitor structural lung disease in preschool and school-age children with CF. However, lung clearance index cannot replace chest computed tomography to screen for bronchiectasis in this population.

http://dx.doi.org/10.1164/rccm.201507-1409OC

See also

Am J Respir Crit Care Med. 2016 Jan 1;193(1):60-7. doi: 10.1164/rccm.201507-1409OC.

Keywords

Child; computed tomography; non pharmacological intervention - diagn; diagnostic procedures; Lung Clearance Index;