primary studies - published, non RCT

Quantitative chest computerized tomography and FEV1 equally identify pulmonary exacerbation risk in children with cystic fibrosis.

Code: PM30160050 **Year:** 2018 **Date:** 2018 **Author:** Sanders DB

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

Observational study

Participants

Participants of the Pulmozyme Early Intervention Trial (PEIT) and Wisconsin Randomized Clinical Trial of CF Newborn Screening (WI RCT). There were 60 participants in the PEIT with mean (SD) age 10.6 (1.7) years at the time of the CT and 81 participants in the WI RCT with mean age 11.5 (3.0) years.

Interventions

Chest computerized tomography (CT) scores were assessed using the Brody score

Outcome measures

The area under the receiver operating characteristic (ROC) curve for Brody scores and forced expiratory volume in 1 s (FEV1) to compare with the frequency of pulmonary exacerbations up to 10 years later.

Main results

The Brody score cut-off that best identified children at-risk for >/=0.3 annual pulmonary exacerbations was 3.6 in the PEIT and 2.1 in the WI RCT. There were no statistical differences between ROC curves for the Brody CT score and FEV1 % predicted in either study (P >/= 0.4).

Authors' conclusions

CT score cut-off values that identify children with CF with mild lung disease at different risks for frequent pulmonary exacerbations over an extended follow up period are similar in separate cohorts. Brody scores and FEV1 % predicted have similar abilities to identify these children, suggesting that FEV1 % predicted alone may be adequate for predicting future frequency of pulmonary exacerbations.

http://dx.doi.org/10.1002/ppul.24144

See also

Pediatr Pulmonol. 2018 Oct;53(10):1369-1377. doi: 10.1002/ppul.24144. Epub 2018 Aug 29.

Keywords

computed tomography; Deoxyribonuclease; intervention - diagn; pharmacological_intervention; diagnostic procedures;