primary studies - published RCT

Association of Intensity of Anti-Pseudomonal Antibiotic Therapy With Risk of Treatment-Emergent Organisms in Cystic Fibrosis Children with Newly Acquired Pseudomonas Aeruginosa.

Code: PM33693586 **Year:** 2021 **Date:** 2021 **Author:** Cogen JD

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

data from EPIC, a randomized controlled trial

Participants

children with CF and new Pa infection. 249 participants

Interventions

Data from the Early Pseudomonas Infection Control Clinical Trial (EPIC CT). The exposure was the number of weeks of oral or inhaled antipseudomonal antibiotics, or ever vs. never treatment with intravenous antipseudomonal antibiotics, during the 18 months of EPIC CT participation.

Outcome measures

The primary outcomes were risks of acquisition of several respiratory organisms during five years of follow up after EPIC CT estimated using Cox proportional hazards models separately for each specific organism.

Main results

Among 249 participants, there was no increased acquisition risk of any organism associated with greater inhaled antibiotic exposure. With each additional week of oral antibiotics, there was an increased hazard of Achromobacter xylosoxidans acquisition (HR=1.24, 95% CI: 1.02-1.50; p=0.03). Treatment with intravenous antibiotics was associated with an increased hazard of acquisition of multidrug-resistant Pa (HR=2.47; 95% CI 1.28-4.78; p=0.01) and MRSA (HR=1.57; 95% CI 1.03-2.40); p=0.04).

Authors' conclusions

Results from this study illustrate the importance of making careful antibiotic choices to balance the benefits of antibiotics in people with CF while minimizing the risk of acquisition of drug-resistant organisms.

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See also

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Keywords

Anti-Bacterial Agents; Bacterial Infections; Child; Ciprofloxacin; Combined Modality Therapy; Drug Administration Schedule; Infant; Infection; pharmacological_intervention; Pseudomonas aeruginosa; Pseudomonas; Respiratory Tract Diseases; Respiratory Tract Infections; Tobramycin; Inhalation OR nebulised; Oral; Quinolones; Aminoglycosides;