primary studies - published, non RCT

Impact of Sustained Eradication of New Pseudomonas aeruginosa Infection on Long-term Outcomes in Cystic Fibrosis

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

This cohort study utilized observational follow-up data on children participating in the Early Pseudomonas Infection Control trial

Participants

249 trial participants

Interventions

standardized therapy for newly acquired Pa.

Outcome measures

Sustained eradicators were defined as those who maintained Pa-negative cultures for 12 months after initial antipseudomonal therapy. Associations between eradication status and outcomes were assessed.

Main results

Of the 249 trial participants included in the study, 172 (69%) achieved sustained eradication of Pa during the trial (sustained eradicators). Over the median 5-year follow-up, sustained eradicators had a 74% reduced risk of developing chronic Pa (hazard ratio [HR], 0.26; 95% confidence interval [CI], .17-.40) and a 57% reduced risk of mucoidy (HR, 0.43; 95% CI, .25-.73) compared with nonsustained eradicators. Sustained eradicators had significantly less anti-Pa antibiotic usage during follow-up compared with nonsustained eradicators. There was no association between eradication status and clinical outcomes including rate of exacerbation and lung function decline.

Authors' conclusions

This is the first study to quantify the long-term durability of microbiological response associated with early antipseudomonal therapy, demonstrating the critical importance of optimizing antipseudomonal therapies during early Pa infection. The clinical impact of failure to achieve sustained Pa eradication remains unclear, however, and may be confounded by anti-Pa antibiotic usage.

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See also

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Keywords

Adult; Anti-Bacterial Agents; Bacterial Infections; Child; Ciprofloxacin; Infection; Inhalation OR nebulised; Oral; pharmacological_intervention; Pseudomonas aeruginosa; Pseudomonas; Respiratory Tract Diseases; Respiratory Tract Infections; Tobramycin; Colistin; Aminoglycosides; Quinolones; other anti-bacterial agents;