primary studies - published RCT

Acquisition of Pseudomonas aeruginosa in children with cystic fibrosis.

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

Extension of a randomized clinical investigation of neonatal screening for cystic fibrosis (CF). The design involved prospective cultures of respiratory secretions

Participants

patients diagnosed through neonatal screening and treated in early infancy compared with those identified by standard diagnostic methods.

Interventions

respiratory secretion cultures for pathogens associated with CF obtained generally by oropharyngeal swabs at least every 6 months and more often if clinically indicated. Patients were managed with a standardized evaluation and treatment protocol at the two Wisconsin certified CF centers; however, there were community and environmental variations associated with the follow-up period as described below.

Outcome measures

colonization with Pseudomonas aeruginosa

Main results

Overall, there were no differences in acquisition of respiratory pathogens between the screened and the control (standard diagnosis) groups. Evaluation of the data between and within the two centers, however, revealed significant differences with earlier acquisition of P aeruginosa in the center with the following distinguishing characteristics: urban location; following patients with the standard US approach in which newly diagnosed, young children were interspersed with older CF patients; and where there were more opportunities for social interactions with other CF patients. The differences were confined to the screened group followed in the urban center in which the median pseudomonas-free survival period was 52 weeks contrasted with 289 weeks in the other center. In addition, assessment of data for the entire CF populations followed at the two centers revealed that the urban center showed a significantly higher prevalence of P aeruginosa colonization in patients between the ages of 3 and 9 years.

Authors' conclusions

These results present questions and generate hypotheses on risk factors for acquisition of P aeruginosa in CF and suggest that clinic exposures and/or social interactions may predispose such patients to pseudomonas infections.

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See also

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Keywords

Bacterial Infections; Child; Infection; Neonatal Screening; Newborn; non pharmacological intervention - diagn; Pseudomonas aeruginosa; Pseudomonas; Respiratory Tract Diseases; Respiratory Tract Infections; screening; diagnostic procedures;