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Cystic Fibrosis Research News

Title:

Lack of Evidence of Increased Risk of Bacterial Transmission During Cystic Fibrosis Educational Programmes

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What was your research question?

In this study we have investigated if children and adolescents attending cystic fibrosis educational programmes exchange bacteria during the programmes. We have further evaluated the risk of bacterial transmission for programme attendees.

Why is this important?

CF educational programmes have been shown to increase the quality-of-life of CF patients and they are highly valued by participants. Patients are, however, often discouraged to participate because of the fear of cross-infection. At the Cystic Fibrosis Centre at Aarhus University Hospital, Denmark, there is a long tradition for educational programmes for children and adolescents with CF. Children and adolescents are grouped according to age, and groups typically consist of 5-10 participants. Programmes are arranged to be age-

appropriate and contain theoretical lessons on subjects such as the respiratory and the digestive systems, reproduction and genetics, medication and infection control; physical and practical activities such as gymnastics, swimming and cooking; and group discussions on subjects such as taking responsibility, everyday-life with CF and dreams for the future. Children and adolescents are given the opportunity to interact and share experiences, thoughts and dreams with peer CF patients.

What did you do?

During 2009 to 2011 seven educational programmes were arranged at the CF Centre at Aarhus University Hospital, each consisting of one to six sessions. Forty-six children and adolescents attended at least one programme. Using DNA sequencing methods, we analysed all isolates of the common CF-bacteria *Pseudomonas aeruginosa*, *Staphylococcus aureus* and *Haemophilus influenzae* from patient sputum samples collected one year before, to one year after participation in a programme. In total, 984 bacterial strains from 46 patients were analysed.

What did you find?

All 24 patients colonised with *P. aeruginosa* carried unique strains. Analysis of *S. aureus* from 43 patients and *H. influenzae* from 32 patients suggested three putative transmissions of *S. aureus* and three putative transmissions of *H. influenzae* among programme attendees.

What does this mean and reasons for caution?

Infection with shared strains of *S. aureus* and *H. influenzae* was also common among patients attending different educational programmes, among patients not attending any programme and among non-CF patients hospitalised with *S. aureus* blood infection.

Statistical analyses did, however, not support an increased risk of transmission of *S. aureus* or *H. influenzae* related to attendance to CF educational programmes.

What's next?

Educational programmes will continue to be scheduled at Aarhus University Hospital and will be constantly reviewed with patient safety and the potential for cross-infection in mind.

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