Cystic Fibrosis Research News

Title:

Proximity to blue spaces and risk of infection with Pseudomonas aeruginosa in cystic fibrosis: a case-control analysis.

Authors:

Goeminne Pieter C[1], Nawrot Tim S[2,3], De Boeck Kris[4], Nemery Ben[3], Dupont Lieven J[1]

Affiliations:

[1] Department of Respiratory Disease, University Hospital of Leuven, Belgium
[2] Center for Environmental Sciences Hasselt University, Hasselt, Belgium
[3] Centre for Environment and health, Department of Public Health and Primary Care, KU Leuven, Leuven, Belgium
[4] Department of Paediatrics, University Hospital of Leuven, Belgium

What was your research question?

We wanted to investigate if patients who have never suffered from a Pseudomonas aeruginosa infection lived significantly further away from "blue space" (e.g. open water source) than patients with a chronic presence of Pseudomonas aeruginosa in the airways to determine if open water may be considered a risk of infection.

Why is this important?

Colonization and infection by Pseudomonas aeruginosa is associated with lower survival, decreased lung function and increased pulmonary infections. Although it is unknown how infection with Pseudomonas aeruginosa occurs, direct infection from the natural environment is believed to be most likely. This suggests that open water could be an important reservoir and source for continuous or intermittent exposure to Pseudomonas aeruginosa.

Cystic Fibrosis Research News

What did you do?

We included all patients who had never been infected with Pseudomonas aeruginosa. For each one of those patients, we then randomly selected a patient with chronic Pseudomonas aeruginosa presence who had the same age and gender. Subsequently, the closest flight path and straight walking distance from the patients' residence to the nearest blue space was calculated and compared between the two groups.

What did you find?

We discovered that adult patients with cystic fibrosis and without Pseudomonas aeruginosa infection live significantly further from blue space (e.g. an open water source) than patients with cystic fibrosis who have a chronic presence of Pseudomonas aeruginosa in the airways.

What does this mean and reasons for caution?

These findings may indicate that natural open water represents a source of infection by Pseudomonas aeruginosa in patients with cystic fibrosis.

What's next?

Identifying Pseudomonas in the air at various distances from blue spaces would, verify whether Pseudomonas aeruginosa can survive and be transmitted through aerosols in a natural environment.

Original manuscript citation in PubMed

http://ac.els-cdn.com/S1569199315001046/1-s2.0-S1569199315001046-main.pdf?_tid=eaf917fa-ffaa-11e4-a64c-00000aacb35f&acdnat=1432207208_77a581971a07df06cfe3f4c02c7315cd

cfresearchnews@gmail.com