

Cystic Fibrosis Research News

Title:

Fungal contamination of nebuliser devices used by people with cystic fibrosis

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What was your research question?

The aim of this study was to see how often nebuliser devices used by people with cystic fibrosis (CF) were contaminated by moulds and yeast. We also wanted to see what types of fungi could be isolated.

Why is this important?

Fungus is commonly isolated from the sputum of people with CF. The most common type is *Aspergillus fumigatus* which can be linked to a wide variety of conditions ranging from hypersensitivity (allergy) to infection. Despite it being very common to find fungus in CF sputum, the role of nebulisers as a potential source for infection has not been investigated.

What did you do?

We screened a total of 170 nebulisers from 149 adults with CF by wetting a sterile cotton swab with sterile water and swabbing each drug chamber. All yeasts and moulds were identified using well-recognised laboratory standards. We also compared the fungal

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contamination of nebuliser devices from each individual to their sputum cultures from the previous 6 months.

What did you find?

Fifty eight percent of people grew a fungus from at least one of their devices and contamination rates were similar for the iNeb and Eflows. *Aspergillus fumigatus* was the most common fungus to be isolated from nebuliser devices and the types of fungus were not linked to either the type of nebulised medication or the person's previous sputum cultures.

What does this mean and reasons for caution?

Fungal contamination of nebulizer devices used by people with CF is common. In clinical practice we have recognised large differences in how well and how regularly some patients clean their nebulisers, with some nebulisers and compressors being returned in a poor state of cleanliness. Education and adherence to the manufacturers cleaning instructions have been shown to reduce contamination, highlighting the importance of regular cleaning and disinfection.

What's next?

Further research is needed to assess the relative effectiveness of different cleaning methods and to investigate if nebuliser devices are a potential source of lung infection.

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