Cystic Fibrosis Research News

Title:

Trends in nontuberculous mycobacteria infection in children and young people with cystic fibrosis

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What was your research question?

Our previous study showed that an increasing number of children with cystic fibrosis (CF) in the United Kingdom (UK) tested positive for nontuberculous mycobacteria (NTM) between 2010 and 2015.We aimed to describe the latest pattern of NTM infection between 2016 and 2018 amongst children with CF in the UK.

Why is this important?

There has been growing concern about lung infection with a type of microbe called NTM in people with CF. NTM infection has been related to a drop in lung function and is difficult to treat. The patterns and risk factors for NTM infection in children with CF are not well understood. Current treatment strategies in children are mainly based on work in adults. There is an urgent need to improve our understanding of NTM infection in children. Having this knowledge will inform the design of future studies and help determine the most effective treatment strategies for NTM in children.

What did you do?

We obtained non-identifiable data from the UK CF Registry on all children with CF aged 16 or less between 2016 and 2018. For each year, we looked at information such as whether or not a child was recorded as having NTM in a sputum, cough swab or bronchoscopy sample and what type of NTM species was grown. We also had data on other factors such as age, gender,

which CF genetic changes they have, infection with other bacteria, lung function and other CF-related problems. Using this information, we carried out work to investigate how these factors related to NTM infection.

What did you find?

The proportion of children with NTM infection was steady between 2016 and 2018 (3.5%, 3.1% and 3.6% respectively). However, the proportion remains significantly higher than it was at the start of the decade in 2010. The majority of children (about two thirds) had grown *Mycobacterium abscessus*, and about a third had grown *Mycobacterium avium* complex. We found that *Pseudomonas aeruginosa* infection, allergic bronchopulmonary aspergillosis (ABPA), lower lung function and older age were associated with NTM infection after controlling for other factors.

What does this mean and reasons for caution?

The registry is limited by how data is recorded and this is different between CF centres. However, there is excellent coverage of almost all people with CF which means our study is nationally representative of the situation in the UK. Our observation of the steady but relatively high number of NTM cases may be due to several factors which we cannot confirm due to the nature of our study. Our results will help design future studies to investigate the best treatments for children and young people with CF who have NTM infection.

What's next?

The proportion of children and young people with CF with NTM infection remains higher than at the start of the decade. Our study emphasises the need for further studies to determine the best treatment strategies for NTM infection in children and young people with CF.

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