



Cystic Fibrosis Research News

Title:

LONGITUDINAL CHANGES AND REGIONAL VARIATION OF INCIDENT INFECTION RATES AT CYSTIC FIBROSIS CENTERS, UNITED STATES 2010-2016

Lay Title:

How did new infections with important bacteria change over time across U.S. CF care centers

Authors:

Marianne S. Muhlebach¹, Xiaotong Jiang²; Michael R. Kosorok², Eili Y. Klein³, Lisa Saiman⁴.

Affiliations:

¹Division Pulmonology CB#7217 University of North Carolina, Chapel Hill, USA

²Department of Biostatistics, University of North Carolina, USA

³Department of Epidemiology, Johns Hopkins and Center for Disease Dynamics, Economics & Policy, Washington, DC USA

⁴Department of Pediatrics, Columbia University Irving Medical Center, New York and Department of Infection Prevention & Control, NewYork-Presbyterian Hospital, New York, USA

What was your research question?

We wondered if the 2013 Infection Prevention and Control policies (IP&C) that were published in the US in 2013 were associated with changes in the frequency of certain infections among people with CF. The bacteria we were interested in were methicillin resistant Staph. aureus (MRSA) and Pseudomonas aeruginosa (PA).

Why is this important?

Both of these bacteria can be transmitted between people with CF and are relevant to clinical outcomes. If our data indicated that the frequency of new onset infections with these bacteria changed after the IP&C guidelines it would indicate the importance and effectiveness of IP&C. We also wanted to see how aspects of CF centers that are not related to IP&C affect new infections.

What did you do?

We used data from the CFF Patient Registry and compared the frequency of new infections in the period 2010-2012 to those in 2014-2016. We also looked at parameters that we expected to affect frequency of infections such as geographic location and many others. To evaluate if

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cfresearchnews@gmail.com



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possible geographic differences are unique to CF we evaluated frequency of MRSA and PA infections from hospital databases collected by The Surveillance Network database who collected this from a set of 300 U.S. hospitals.

What did you find?

New PA infections were twice as frequent as MRSA. At CF centres caring for children the frequency for PA and MRSA decreased over time. In Adult CF centres only PA infections decreased. MRSA infections were most frequent in the Southern region for non-CF patients and for children with CF. PA tended to be higher in the South. Larger CF centres, those seeing more people with low lung function, and more people of LatinX origin had more frequent PA infections in 2014-2016. Yet, centres with more people of LatinX origin had lower MRSA frequency. There was no distinct change of infections around 2013.

What does this mean and reasons for caution?

We learnt that certain characteristics that CF care centres cannot influence do affect infection rates. We also showed that some of these reflect infections in the non-CF patients which could mean that social aspects and temperature matters to infections, especially for MRSA. Although the infection rates did not change around 2013 we identified characteristics (for example how many people smoked) that predicted a bigger decline in infections. Therefore one can address such aspects moving forward.

What's next?

We will continue to examine risk factors for new infections with MRSA and PA. These risk factors can be studied for the centres themselves or the risk factors specific to people with CF. It is also important to track how well IP&C is carried out at CF centres in the U.S.

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