



# Cystic Fibrosis Research News

## Title:

Outcomes of cystic fibrosis pulmonary exacerbations treated with antibiotics with activity against anaerobic bacteria

## Authors:

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## What was your research question?

Does use of antibiotics that cover anaerobic bacteria result in improved outcomes of cystic fibrosis (CF) pulmonary exacerbations (PEX)?

## Why is this important?

Antibiotics to treat CF PEX are typically selected to treat the bacteria commonly recovered from culture of CF sputum and throat swab samples, such as *Pseudomonas aeruginosa*, and *Staphylococcus aureus*. Certain studies have suggested that anaerobic bacteria (not typically looked for on culture of CF samples) may have a role in CF PEX, but it's not known if antibiotics that treat these anaerobic bacteria lead to better outcomes of PEX.

## What did you do?

We evaluated clinical data from 514 PEX treated with IV antibiotics from 182 people with CF, ages 6 and older, at the University of Michigan. IV antibiotics were categorized as to whether or not they provided treatment of anaerobic bacteria, and PEX were matched to try and control for differences between the groups, including lung function and age.

## What did you find?

Broad anaerobe coverage was used in ~25% of PEX, and was used more often for older patients with worse baseline lung function, and in patients with *Achromobacter* or *Burkholderia* infections. In the matched PEX, broad anaerobe coverage was not associated



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with improved lung function recovery. Broad anaerobe coverage was also not associated with shorter time to next PEx.

## **What does this mean and reasons for caution?**

In this single center, retrospective study, antibiotics with broad activity against anaerobes were not associated with improved outcomes of CF PEx. While our results do not rule out the possibility that certain patients or PEx may benefit from treatment of anaerobic bacteria identified in respiratory samples, our results suggest that anaerobic coverage does not overall provide additional benefit for routine, first-line therapy for CF PEx.

## **What's next?**

Next steps will include future studies to determine if specific people will benefit from treatment of anaerobes in the setting of PEx, for example, identifying anaerobes in sputum or throat swab samples, and targeting treatment to those individual culture results.

## **Original manuscript citation in PubMed**

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