



Cystic Fibrosis Research News

Title:

The Effect of Oral and Intravenous Antimicrobials on Pulmonary Exacerbation Recovery in Cystic Fibrosis

Lay Title:

Comparing Oral and Intravenous Antibiotics on Lung Function Recovery in Cystic Fibrosis

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What was your research question?

Does treating with oral antibiotics work as well as treating with intravenous (IV) antibiotics for recovering lung function after pulmonary exacerbations?

Why is this important?

Loss of lung function is a major cause of early death in people with CF and it is well-known that one way lung function is lost is from incomplete recovery of pulmonary exacerbations. Today more than half of exacerbations are treated using only oral antibiotics, which are very convenient for patients, but we don't really know if they work as well at restoring lung function as IV antibiotics.

What did you do?

People participating in the Early Intervention in Pulmonary Exacerbation (eICE) study measured their lung function themselves at home. We studied how peoples' lung function changed after antibiotic treatments were started for pulmonary exacerbations. We divided people into three groups (mild, moderate, and severe) based upon how far their lung function had dropped during their exacerbations. Then for each group, we compared how lung function changed for people who received only oral antibiotics for their exacerbation with lung function changes for people who were treated with IV antibiotics.

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What did you find?

We found that people who had their pulmonary exacerbations treated with oral antibiotics did not recover as much lung function as people who were treated with IV antibiotics. The results were the same whether people had a mild, a moderate, or a severe exacerbation.

What does this mean and reasons for caution?

We cannot be certain why oral antibiotics did not work as well as IV antibiotics in getting lung function back after exacerbation. It could be that if we had studied people for a longer time (after antibiotic treatment ended) we might not have seen as much of a difference. It's also possible that people receiving IV antibiotics could have had other additional help such as better chest physiotherapy, nutritional support, or rest during treatment, which could have happened in the hospital. Or it may be that IV antibiotics just work better than oral antibiotics for CF pulmonary exacerbations.

What's next?

We need to continue to study how different ways of treating pulmonary exacerbations compare to each other so that we can find those treatments with the best results.

Original manuscript citation in PubMed

<https://pubmed.ncbi.nlm.nih.gov/33685776/>