Cystic Fibrosis Research News

Title:
Duration of intravenous antibiotic treatment for acute exacerbations of cystic fibrosis: A systematic review

Lay Title:
A summary of previously-published research looking at the length of treatment of acute infections and exacerbations in people with cystic fibrosis

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What was your research question?
Do people with CF who are treated for an infection for less than 2 weeks have the same response to treatment as people treated for 2 weeks or longer?

Why is this important?
Until recently, there had been no studies comparing different durations of treatment for people with CF who were experiencing an exacerbation. Generally, a minimum of two weeks of treatment was recommended. However, for some patients, it is possible they may recover just as well with a shorter length of treatment as with a longer one. If people could be treated for a shorter period of time, they would hopefully need less time in hospital, and require less time off work, school or university.

What did you do?
We performed a search of all of the medical literature to find as many studies as possible that might help answer this question. This search found over 18,300 studies. These were then reviewed one by one and filtered to leave only the studies with the most relevant information remaining. 52 studies were left that were suitable for the research question and analysis of results.

What did you find?
We found that the change in lung function seen in studies that treated infections for less than 14 days was similar to those that treated for 14 days or longer. One important factor that

affected this was if the treatment was in hospital or at home. If treatment was in hospital, the shorter duration was the same in terms of improvement in lung function. However, if treatment was at home, then a shorter length of treatment resulted in a lesser degree of improvement in lung function.

What does this mean and reasons for caution?

For some people with CF who are experiencing exacerbations, a shorter length of treatment of 10-12 days may be as effective as 14 days. However, this may only apply to treatments based in hospital. Lung function and symptoms continue to be important indicators of a response to treatment. Additionally, some people with CF may have other conditions such as diabetes, or liver disease that may also affect their response to treatment. As a result, if a person is not responding sufficiently within the first 1-2 weeks, antibiotic treatment is often extended beyond two weeks.

What's next?

Further research is needed to study what factors may affect the response to antibiotic treatment at home, as well as what other factors contribute to a poor response to treatment.

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