



# Cystic Fibrosis Research News

## **Title:**

Association of site of treatment with clinical outcomes following intravenous antimicrobial treatment of a pulmonary exacerbation

## **Lay Title:**

Outcomes after IV antibiotics for pulmonary exacerbations at home or in the hospital

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## **What was your research question?**

We wanted to understand how outcomes for adults with cystic fibrosis (CF) treated with intravenous (IV) antibiotics for a pulmonary exacerbation at home compared to treatment with IV antibiotics in the hospital.

## **Why is this important?**

Pulmonary exacerbations are important events in the lives of persons with CF, both because they interfere with patients' well-being and because most patients who have an exacerbation lose lung function that they will never recover. Although exacerbations are common, very little is known about which treatments provide better results. People with CF may prefer to receive IV antibiotics at home to minimize disruptions in work, school, and family life. However, we don't know if treatment at home provides the same benefits of treatment in the hospital, where symptoms, lung function, and side effects can be more closely monitored.

## **What did you do?**

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We used data from the recently completed Standardized Treatment of Pulmonary Exacerbations (STOP)-2 interventional trial that compared changes in lung function, symptoms, and weight from the start of IV antibiotics to 2 weeks following a planned 10-, 14-, or 21-day treatment with IV antibiotics for pulmonary exacerbation. We compared results among participants who received IV antibiotics in the hospital, at home, or in both locations. We used statistical methods to account for differences in characteristics of people with CF that were treated at home, in the hospital, or both locations.

## **What did you find?**

We found that, even when accounting for differences in age, lung function, and other factors, people with CF treated entirely in the hospital at the greatest improvements in lung function, respiratory symptoms, and weight. People with CF treated entirely at home had the smallest improvements, and people treated at home and in the hospital had results that were in-between these two groups. The time to the next pulmonary exacerbation treated with IV antibiotics did not differ between the three groups.

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

Adults with CF treated with IV antibiotics for a pulmonary exacerbation in the hospital had the best outcomes following treatment. This information can be used to inform decisions on treatment location for individuals with CF who are being treated with IV antibiotics. However, our results may not apply to other parts of the world with different treatment practices that may better support IV antibiotic treatment at home. The study was completed prior to the availability of the highly effective modulator therapy, elexacaftor-tezacaftor-ivacaftor, and the COVID-19 pandemic.

## **What's next?**

We will explore additional studies that might improve the effectiveness of home IV antibiotic therapy.

## **Original Manuscript Citation in PubMed**

<https://pubmed.ncbi.nlm.nih.gov/34857494/>