

Cystic Fibrosis Research News

Title:

Peripheral lung effect of elexacaftor/tezacaftor/ivacaftor in adult cystic fibrosis

Lay Title:

Triple therapy is equally effective in real life as in the clinical trials.

Authors:

Stylemans Dimitri^a, Darquenne Chantal^b, Schuermans Daniël^a, Verbanck Sylvia^a, Vanderhelst Eef^a

Affiliations:

^a: Respiratory Division, Vrije Universiteit Brussel (VUB), Universitair Ziekenhuis Brussel (UZ Brussel), Laarbeeklaan 101, 1090 Brussels, Belgium

^b: Department of Medicine, University of California, San Diego, CA 92093-0623, USA

What was your research question?

In clinical trials, triple therapy was seen to reduce symptoms and improve airway obstruction, but patients with the most severe form of airway obstruction had been excluded for safety reasons. We wanted to check whether triple therapy is as effective in real-life, including in patients with severe airway obstruction.

Why is this important?

The clinical relevance of our study was twofold. On the one hand, the aim was to confirm treatment effects and safety of triple therapy in a real-life setting (as opposed to the clinical trial setting). On the other hand, our focus on patients with severe airway obstruction was meant to fill a knowledge gap, since these patients are not usually included in large clinical trials, despite representing a sizeable portion of the cystic fibrosis patient population.

What did you do?

We followed 14 patients with cystic fibrosis who started triple therapy, including patients with severe airway obstruction, previously excluded from clinical trials. Treatment effects in terms degree of airway obstruction (via standard and more sophisticated lung function testing) and number of acute exacerbations were noted. Treatment safety was monitored by clinical examination and blood testing (eg. looking at liver function). Patients were followed up at 2 weeks, 4 weeks and monthly thereafter up to 3 months.



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What did you find?

As soon as 2 weeks after treatment onset, significant improvements in airway obstruction were observed, and these persisted throughout the entire study period. A significant decrease in the number of exacerbations was noticed. Treatment effects were similar in patients with severe airway obstruction as compared to those with less severe airway obstruction. We were also able to show that the majority of the effect can be attributed to the smallest airways in the peripheral lung, which is difficult to measure with standard lung function techniques. Treatment is safe, however, one patient had to interrupt treatment because of liver toxicity.

What does this mean and reasons for caution?

This study confirms that triple therapy works well on reducing symptoms, improving airway obstruction and reducing the number of exacerbations, even in patients with severe obstruction and that treatment is safe. However, it remains important to closely monitor each patient, since adverse events like liver toxicity can occur.

What's next?

Since the number of patients in our study was rather small, we believe that similar studies in a larger number of patients still need to be performed to confirm our findings. Our study has indicated which biomarkers are particularly likely to be useful in the process.

Original manuscript citation in PubMed

<https://pubmed.ncbi.nlm.nih.gov/33832855/>