European Cystic Fibrosis Society

Journal of Cystic Fibrosis
The Official Journal of the European Cystic Fibrosis Society

Cystic Fibrosis Research News

Title:

Short-term effect of elexacaftor-tezacaftor-ivacaftor on lung function and transplant planning in cystic fibrosis patients with advanced lung disease

Lay Title:

Effect of elexacaftor-texacaftor-ivacaftor in cystic fibrosis patients with advanced lung disease

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What was your research question?

How do CF patients with advanced lung disease respond to initiation of ETI?

Elexacaftor-tezacaftor-ivacaftor (ETI) is a recently approved oral therapy for the treatment of cystic fibrosis and acts by restoring function to the abnormal protein responsible for the development of cystic fibrosis disease. The pivotal phase III clinical trials that investigated ETI and lead to its approval in the United States demonstrated an average improvement in lung function of 13.8%. Of significance, these studies only included CF patients with relatively well preserved lung function with the lower limit of lung function allowed for study inclusion being 40%.

Why is this important?

The findings of this study are of importance as it provides CF caregivers information regarding how patients with advanced stage disease at the time of ETI initiation may respond to this therapeutic, which has already proven highly effective in CF patients with preserved lung function.

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What did you do?

To address this gap in knowledge we performed a retrospective study of adult patients from three large academic CF centers and included all eligible patients starting ETI who had a lung function less than 40% and/or other high-risk features as defined by the 2019 CFF lung transplant guidelines. Change in lung function, treatment tolerability, and effect on lung transplant planning were assessed.

What did you find?

This study found that CF patients with advanced lung disease at the time of starting ETI experienced a rapid improvement in lung function with an average improvement of 7.9% and nearly two thirds of the patients studied experienced a lung function improvement of at least 5%. Treatment was well tolerated, and no patients required treatment discontinuation. Using the CF Foundation guidelines for lung transplant planning, a majority of the studied patients that were previously recommended for lung transplant referral and evaluation no longer met criteria for referral after starting ETI. These findings suggest that initiation of ETI in patients with advanced lung disease is safe and highly efficacious, resulting in improved lung function for the majority of patients and resulted in less need for lung transplant referral based on CFF guidelines.

What does this mean and reasons for caution?

The findings of this study are limited by the short follow up duration after starting ETI and longer-term data is needed to better understand future lung function changes in patients with advanced lung disease at the time of starting ETI.

What's next?

To address this gap our group is planning to report one-year outcomes as it pertains to this patient population as this data becomes available.

Original manuscript citation in PubMed

https://pubmed.ncbi.nlm.nih.gov/34162524/