Cystic Fibrosis Research News

Title:
Assessing the impact of elexacaftor/tezacaftor/ivacaftor on anxiety and depression symptom scores in adults with Cystic Fibrosis

Lay title:
The impact of elexacaftor/tezacaftor/ivacaftor on anxiety and depression in adults with Cystic Fibrosis

Authors:
Minh Nguyen[1], Pat McDiarmid[3], April Tanzler[3], Renée Degenais[3,4], Carolina Bevanda[1], Bradley S. Quon[1,2]

Affiliations:

1. Division of Respiratory Medicine, Department of Medicine, University of British Columbia, Vancouver, BC, Canada
2. Centre for Heart Lung Innovation, St. Paul's Hospital and University of British Columbia, Vancouver, BC, Canada
3. Adults Cystic Fibrosis Program, St. Paul's Hospital, Vancouver, BC V6Z 1Y6, Canada
4. Department of Pharmacy, St. Paul's Hospital, Vancouver, BC V6Z 1Y6, Canada

What was your research question?
Using the Generalized Anxiety Disorder 7-item (GAD-7) and Patient Health Questionnaire 9-item (PHQ-9), how did anxiety and depression symptoms change for adults with CF on elexacaftor/tezacaftor/ivacaftor (ETI)?

Why is this important?
Although ETI has been shown to improve physical health of adults with CF, its effect on mental health is still uncertain as previously published studies reported mixed and relatively short-term findings. Hence, there remains a need for additional studies on the long-term mental health outcomes for adults with CF on ETI.

What did you do?
We compared self-reported GAD-7 and PHQ-9 scores before ETI with scores at 6 and 12 months after ETI initiation. As severity of anxiety and depression symptoms are categorized into 4 groups (normal, mild, moderate & severe), we assessed the differences in proportion

Cystic Fibrosis Research News

of individuals in each severity group before and after ETI. We also used a change of ±4 points to define whether an individual experienced clinically significant improvement or worsening in anxiety and depression symptoms. Characteristics (for example: age, sex, pre-existing psychiatric diagnoses and medications) of individuals with versus without clinically significant changes were also compared.

What did you find?
We found that GAD-7 and PHQ-9 scores improved after 6 and 12 months of starting ETI. There was a greater proportion of individuals that had clinically significant improvement (vs. worsening) in anxiety and depression symptoms. These individuals were more likely to have a pre-existing psychiatric diagnosis and/or required psychiatric medications before starting ETI, compared to those without clinically significant changes.

What does this mean and reasons for caution?
Our results suggest that although there was an overall improvement in anxiety and depression after 6 and 12 months of starting ETI, there was still ~10% of individuals that experienced worsening in symptoms. There was also no meaningful change in the proportion of individuals living with moderate to severe symptoms after ETI. These findings highlight the need for more studies to better understand the factors that contribute to worsening of mental health on ETI and look for strategies to help individuals with moderate to severe symptoms despite being on ETI.

What's next?
As this study was performed at one CF clinic, data from other clinics will be needed to confirm the results. Also, anticipating that some individuals will consider switching to the once-daily therapy vanzacaftor/tezacaftor/deutivacaftor following approval, it is important to continue evaluating mental health outcomes during this transition.

Original manuscript citation in PubMed
https://pubmed.ncbi.nlm.nih.gov/39034264/