

01. Title: Elexacaftor–Tezacaftor–Ivacaftor in Patients with Cystic Fibrosis: A Meta-Analysis of Randomized Control Trials

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ISSN 2076-6327

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Background: The Cystic Fibrosis (CF) modulator medication Elexacaftor–Tezacaftor–Ivacaftor (ETI) demonstrated remarkable efficacy for persons with at least one F508del allele, a condition that affects at least 85% of CF patients. The meta-analysis aims to assess the effect of ETI in CF patients and critically appraise its effectiveness.

Methods: PubMed, Scopus, and Web of Science servers were used to conduct a systematic search in compliance with the PRISMA guidelines. RevMan software produces the meta-analysis of pooled effect estimates.

Results: A total of 6 randomized controlled trials with 1187 participants were included in the analysis. Analysis of the overall effect estimates found that ETI therapy resulted in a significant increase in FEV1% (Forced Expiratory Volume in 1 second) [MD = 8.75; 95% CI: 3.43, 14.06; p = 0.001] and CFQ-R (Cystic Fibrosis Questionnaire-Revised) [MD = 13.15; 95% CI: 7.79, 18.51; p<0.00001]. It also significantly reduces sweat chloride concentration [MD = -38.86; 95% CI: -45.67, -32.05; p<0.00001]. Cough (12.5%), headache (11.7%), infective pulmonary exacerbations (9.7%), and increased sputum (8.2%) are among the common adverse effects reported in the treatment group.

Conclusion: When assessed collectively, the benefits of ETI medication seem to outweigh the sometimes-anticipated side effects associated with ETI therapy.

Key Words: Cystic fibrosis, Elexacaftor, Ivacaftor, Tezacaftor

Figure or Table:

