

Cystic Fibrosis Research News

Title:

Randomized Controlled Study of Aerosolized Hypertonic Xylitol Versus Hypertonic Saline in Hospitalized Patients with Pulmonary Exacerbation of Cystic Fibrosis

Authors:

Sachinkumar Singh^a, Douglas Hornick^b, Janel Fedler^c, Janice L. Launspach^b, Mary E. Teresi^a, Thomas R. Santacroce^d, Joseph E. Cavanaugh^c, Rebecca Horan^b, George Nelson^e, Timothy D. Starner^f, Joseph Zabner^b, Lakshmi Durairaj^b

Affiliations:

^aStead Family Department of Pediatrics, Carver College of Medicine, University of Iowa, Iowa City, IA 52242, USA

^bDepartment of Internal Medicine, Roy J. and Lucille A. Carver College of Medicine, University of Iowa, Iowa City, IA 52242, USA

^cDepartment of Biostatistics, College of Public Health, University of Iowa, Iowa City, IA 52242, USA

^dWalter Reed National Military Medical Center, Bethesda, MD 20889, USA

^eDoris Duke Clinical Research Scholar, University of Iowa, USA

^fDepartment of Pediatrics, University of Wisconsin-Madison, 600 Highland Ave, Madison, WI 53792, USA

What was your research question?

Lung disease in cystic fibrosis (CF) involves repeated bacterial infection and long-term complications. Scientists are studying different treatments that can help delay or slow down lung damage. Our aim was to evaluate the safety of inhaled xylitol in people with CF who were hospitalized for their lung disease.

Why is this important?

The defense mechanisms against bacterial infections in the lungs are salt-sensitive. An increase in salt concentration hinders the activity of these mechanisms whereas lowering the salt concentration improves their effectiveness. Xylitol is a sweet tasting sugar that can lower the salt levels in the lining of lungs and possibly improve an individual's ability to fight infections. Reduced infections could prevent long term complications and associated decline in lung function in people with CF.

What did you do?

Sixty people with cystic fibrosis were randomly selected to receive either inhaled salt solution or xylitol, twice a day for 14 days. We evaluated their lung function, number of bacteria in

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their phlegm, and quality of life at baseline and at study completion. We also assessed time until their next hospitalization, and side effects during the study.

What did you find?

59 people completed the study (one subject in the salt group dropped out of the study before any study drug was given). At study completion, both groups showed improvement in lung function, and number of bacteria in their phlegm. There were no significant differences between the 2 treatments in lung function, number of bacteria in phlegm, quality of life, time until their next hospitalization or side effects during the study.

What does this mean and reasons for caution?

Based on the results of this study, we concluded that inhaled xylitol was well-accepted and tolerated among people with CF hospitalized for lung complications. An important limitation of our study was that we could not blind study participants to the drug they received during the study due to salty and sweet taste of salt solution and xylitol, respectively. However, this is unlikely to affect the study results since majority of the assessments were objective in nature.

What's next?

Even though inhaled xylitol was well-tolerated, we did not see a big improvement in lung function in this small study. Hence, we need to study this treatment in a larger group of patients for longer time to see if it will help any of the important lung symptoms and complications.

Original Manuscript citation in PubMed

<https://www.ncbi.nlm.nih.gov/pubmed/?term=Randomized+Controlled+Study+of+Aerosolized+Hypertonic+Xylitol+Versus+Hypertonic+Saline+in+Hospitalized+Patients+with+Pulmonary+Exacerbation+of+Cystic+Fibrosis>