

Cystic Fibrosis Research News

Title:

A RANDOMIZED CONTROLLED TRIAL OF VITAMIN D REPLACEMENT STRATEGIES IN PEDIATRIC CF PATIENTS

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What was your research question?

This study compared two ways of supplementing vitamin D to determine which method more effectively improves the vitamin D level in pediatric patients with CF. We also looked at whether a higher level of vitamin D affects inflammation, lung function, and markers of disease severity.

Why is this important?

Many factors cause patients with CF to have a low vitamin D level, which we know can lead to low bone density and bone fractures. New research suggests that vitamin D plays a role in regulating the immune system and may help the body fight infections. However, few studies have investigated the best method for replacing vitamin D to achieve normal levels in children with CF.

What did you do?

Fifty participants with CF, between the ages of 6 and 21 years, each who had a low vitamin D level—were randomly assigned to one of two groups. Over a period of eight weeks, one group received 50,000 Units of vitamin D2 (ergocalciferol) twice a week, and the other

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group received 50,000 Units of D3 (cholecalciferol) once a week. These doses were chosen as they were the highest recommended replacement regimens at the time the study was designed. We then checked participants' vitamin D level again and compared the change in vitamin D level between groups. We also measured the change in blood markers of inflammation after the eight weeks of vitamin D supplementation.

What did you find?

We found no difference between the two treatment groups. Approximately two thirds of participants achieved normal vitamin D levels. In addition, we found no significant difference between groups when we measured the change in markers of inflammation. We did not identify any differences between the group that achieved normal vitamin D levels and the group that did not.

What does this mean and reasons for caution?

These results suggest that either of these replacement regimens is able to normalize vitamin D levels in the majority of pediatric patients with CF. However, D3 may be more effective, since a lower dose of D3 achieved the same results as the dose of D2. Since this study was designed specifically to look at improving vitamin D levels, the results about inflammation may not be accurate; a longer study with a larger participant group may be needed to determine if vitamin D status is able to affect inflammatory markers.

What's next?

While these results provide useful information about short-term vitamin D replacement regimens, future studies should seek to determine the necessary daily dose of vitamin D to maintain adequate vitamin D levels. Additional studies should also examine the long-term effects of adequate vitamin D levels on inflammation.

Original manuscript citation on Pubmed

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