



Cystic Fibrosis Research News

Title:

Bone Mineral Density Screening by DXA for people with Cystic Fibrosis: A registry analysis of patient and program factors influencing rates of screening.

Lay Title:

Patient and program characteristics which influence screening for bone mineral disease in people with Cystic Fibrosis

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What was your research question?

We sought to use the Cystic Fibrosis Patient Registry to explore the rate of screening for osteoporosis and osteopenia in U.S. CF care centers and what factors influence the screening rate.

Why is this important?

As people with Cystic Fibrosis live longer, conditions beyond the lungs such as bone disease are becoming increasingly more important to recognize and treat. Bone disease in Cystic Fibrosis is important because people with low bone density are at risk of fractures just from coughing or minor accidents. These fractures can lead to problems with airway clearance, chronic pain, and can affect candidacy for lung transplant.

Recommendations for screening all individuals with CF over the age of 18 in the U.S. for bone disease have existed since 2005, though only about 60% of people actually are screened.

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What did you do?

We used data from the US Cystic Fibrosis Patient Registry between 2014 and 2018 to explore the rate of screening for bone disease in all people over the age of 18 using a technique called dual-energy x-ray absorptiometry (DEXA), the gold standard for diagnosing bone disease.

We then looked at characteristics of centers and individuals that most effected the rate of screening. For centers, we examined factors such as how far people travelled, type of health insurances, and adherence to other guidelines. For individual characteristics, we examined factors such as sex, lung function, diabetes status and many others.

What did you find?

We found that 60% of the patients received appropriate screening for bone disease, while 40% did not. The top quarter of programs screened over 74% of people while the lowest quarter screened less 44% of their population.

The most influential factor for improved center screening rates appeared to be larger patient population. Centers who were not adherent to other guidelines, such as screening for diabetes, also screened less often for bone disease.

At the individual level, the groups missing appropriate screening the most were people at younger age (18-35), with normal lung function, and those without concurrent diabetes.

What does this mean and reasons for caution?

While screening recommendations for bone disease have existed since 2005, we demonstrated that a significant number of people are still missing appropriate screening. Individuals most at risk for missed screening are younger individuals, with higher lung function, and without other coexisting conditions. While some centers are better than others, everyone needs to make a concerted effort to improve screening and protect the long-term health of people with Cystic Fibrosis.

Our study is limited, as missed screening does not equal detection of bone disease. We need further studies to determine risks factors for bone disease to determine who screening would benefit most.

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What's next?

The next step for our project is to use the Cystic Fibrosis Patient Registry to determine the true number of people with reduced bone density, as this has not yet been studied on a large scale. We also hope to examine risk factors for development and protection against bone disease.

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