Reviewer's report

Title: Osteoporosis in Canadian Adult Cystic Fibrosis Patients: A Descriptive Study

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Level of interest: A paper of limited interest

Advice on publication: Unable to decide on acceptance or rejection until the authors have responded to the compulsory revisions

OSTEOPOROSIS IN CANADIAN ADULT CYSTIC FIBROSIS PATIENTS

by Brenck Mann, et al.

OVERVIEW:

This study is a descriptive one done in cross-sectional fashion designed to assess bone mineral density (BMD) in adult cystic fibrosis patients attending a Canadian CF Center. The authors found that over half of the 40 CF patients studied had reduced T and Z scores at the spine and femur positions at baseline. Furthermore, they found annualized changes in spine and femoral neck bone density of -.86% and -3.04%, respectively. They concluded that their study confirmed that osteoporosis was a significant problem in adult CF patients in Canada.

MAJOR COMMENTS:

1. This study, while representing the first such effort in Canada, provides results similar to studies from many European countries and the U.S. regarding bone disease in CF patients. More than 20 manuscripts to date have been published with similar findings.

2. The longitudinal changes in bone density in CF adults have not been as well studied as the authors point out in their discussion. For this reason, the longitudinal changes are of great interest. However, the authors stated that some of the patients for whom longitudinal data were available were under treatment for osteoporosis with bisphosphonates and/or sex hormone replacement. For this reason, it was difficult for them to conclude that these changes represented solely the natural history of CF bone disease. One wonders if patients treated with bisphosphonates and/or sex hormone replacement can be separated out in a subgroup analysis to determine the effects of these interventions rather than clumping all the patients together in one heterogeneous group. The authors
state the subgroup analysis was difficult because the sample size was so small, but nonetheless these data would be of interest. These data would be of particular interest if bisphosphonates or hormone replacement therapy were able to blunt the decline in bone density that is seen as a result of the natural history of this problem.

3. The authors note that many of their patients were Vitamin D deficient, and this as well has been described in many previous manuscripts reviewed by Ott SM, and Aitken ML (Osteoporosis in patients with cystic fibrosis. Clin Chest Med. 1998 Sep;19(3):555-67.) and would not be completely unexpected given the high latitude of the CF Center at which the patients sought their healthcare.

4. Fracture data were reported and are of great interest since this has been an understudied area in CF. Nonetheless, only clinical fractures were ascertained, and efforts to review chest x-rays or spine films as a more sensitive measure of vertebral fractures were not undertaken.

5. Since there have been many studies published in this area and the sample size of this current study is relatively small, much more could potentially be gained from a study of this nature by increasing the sample size - in particular, as it pertained to the longitudinal acquisition of BMD data and/or a more comprehensive survey of fractures.

**Competing interests:**

None declared.