Reviewer's report

Title: Hip and fragility fracture prediction by 4-item clinical risk score and mobile heel BMD: a women cohort study

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Reviewer: STEFANO GONNELLI

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To the Authors
The manuscript “Hip and fragility fracture prediction by 4-item clinical risk score and mobile heel BMD: a women cohort study” by Albertsson DM et al. aims to revalidate a 4-item clinical risk score and evaluate a portable heel bone mineral density technique regarding hip and fragility fracture risk among elderly women. The conclusion is that the combination of the 4-item screening method with heel BMD improves the fracture prediction.

Specific Points

Introduction

Line 12; the meaning of “manifest osteoporosis” is unclear. This term should be changed to “established osteoporosis”

Methods

The Authors should indicate the reason why the changed the question “Can you rise 5 times from a chair without using your arms” (Model 1) to “having fallen last years” (Model 2).

The precision of DXL Calscan device should be reported. How did the Authors evaluate precision?

It seems to be unclear why the Authors measured 41 women with a DXA device. Considering that this group is not representative of the entire population any comparisons between the 41 women who underwent DXA evaluation and the entire population have little sense and can be omitted.

The Authors should clearly report when the measurement with Calscan were carried out.

The meaning of the statement “After BMD assessment with DXL 51% (42/83) of the women refused later DXA investigation” is unclear. Why did the A. measure heel BMD in 83 women only?

Fracture registration: The Authors should clearly indicate which fractures were considered fragility fractures; in other words for each code the correspondent fracture should be reported

Statistical analysis

The Authors should report the reason why they did not use ROC analysis in order to assess the influence of risk factors on fractures (ROC analysis was
carried out in a previous study by the same group) [Ann Fam Med 2007 5(1):48-56] ROC analysis may improve the value of the results of the present study.

Results

It is unusual that only 5% of women had heel BMD values in the normal range. How did the Authors explain this finding?

The adjective “optimal” for heel BMD should be changed to “normal”.

Figure 3: The number of subjects is too low to form any significant conclusions about the correspondence between heel T-score and hip osteoporosis level. (-2.5 SD vs -3.3 SD). This point should be discussed in the discussion section. Therefore the Authors can not state that -3.3 SD of Calscan corresponds to -2.5 SD at femur.

The Authors should report how many women were on treatment with antiresorptives in the years 2004-2005.

How did the Authors evaluate the use of antiosteoporotic agents during the years 2004-2005? Did the Authors observe a reduced fracture risk for those women who were on treatment with drugs?

Discussion

The limitations of the study should be more clearly reported. In particular the fact that the low number of hip fracture (n=7) could reduce the significance of the conclusion should be discussed.

Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests