CORRESPONDENCE

The Epidemiology of Osteoporosis—Bone Evaluation Study (BEST): An Analysis of Routine Health Insurance Data

by Prof. Dr. med. Peyman Hadji et al. in volume 4/2013

Paradigm Shift

First of all, the authors deserve thanks for collecting reality-based data that shed a different light on the prevalence and incidence of osteoporosis compared with the exaggerated estimates of recent decades.

However, for the past two decades osteoporosis has not been termed a "systemic disorder" but—reflecting a paradigm shift—as a reduced strength of the bone with an increased likelihood of fracture (27th congress of the American Society for Bone and Mineral Research [ASBMR]", 2005). It is caused mainly by the lack of physical activity that has become such a prevalent feature in our civilization (1). Furthermore, the data reported by Hadji et al. show unequivocally that vertebral fractures are not the most common osteoporotic fractures—something I have cited from robust sources for decades.

The World Health Organization's definition of osteoporosis, which was cited several times in the article was on the wrong track, prepared by the so-called gold standard dual energy x-ray absorptiometry (DXA) used for measuring bone density. The method is appropriate for epidemiological-statistical purposes, but not for diagnostic evaluation. Instead, an individual assessment of the probability of fractures should be conducted by using the system WHO-FRAX, based on large, population-based cohorts (www.sheffield.ac.uk/FRAX). This considers relevant clinical risk factors as well as, optionally, bone density, which has a merely modulating effect (2).

The S3 guideline of the *Dachverband Osteologie* (DVO, the umbrella organization of the scientific societies in Germany, Austria, and Switzerland that are predominantly, or with a scientific focus, involved in bone research), which was cited several times, should not be left uncommented. According to a comparative study we are about to publish, using the guideline with the internet-based scoring system in clinical practice means than an indication for treatment is defined 2.5–3 times as often than when using the WHO-FRAX score (30.3% versus 12.0%) in patients with risk factors. The DVO system includes overestimates of risk factors that are not sufficiently evidence based—for example, the effect of thyroid-stimulating hormone (TSH) or aromatase inhibitors (3).

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REFERENCES

1. Frost HM, Schneider P, Schneider R: Behandlungsbedürftige Osteoporose oder physiologische Osteopenie? – WHO Definition im Gegensatz zum Utah Paradigma. Dtsch med Wochenschr 2002; 127: 2570–4.
2. Hillier TA, Cauley JA, Rizzo JH, et al.: WHO absolute fracture risk models (FRAX): do clinical risk factors improve fracture prediction in older women without osteoporosis? JBMR 2011; 26: 1774–82.
3. Schneider R, Schneider M, Reiners Chr, Schneider: Effects of levothyroxine on bone mineral density, muscle force and bone turnover markers: a cohort study. JCEM 2012; 297: 3926–34.
4. Hadji P, Klein S, Gothe H, Häussler B, Kless T, Schmidt T, Steinle T, Verheyen F, Linder R: The epidemiology of osteoporosis—Bone Evaluation Study (BEST): an analysis of routine health insurance data. Dtsch Arztebl Int 2013; 110(4): 52–7.

Prof. Dr. med. Dipl.-Min. Peter Schneider
Klinik und Poliklinik für Nuklearmedizin
Universitätsklinikum Würzburg
Schneider_P@klinik.uni-wuerzburg.de

Conflict of interest statement
The author declares that no conflict of interest exists.

In Reply:

We wish to comment on Schneider's appropriate and constructive criticisms. The WHO definition of osteoporosis that we chose for our article is still valid—in our article, we pointed out that the fracture risk depends on several risk factors; these obviously include people's civilization-related physical inactivity, as Schneider mentioned. For this reason we mentioned the DVO's S3 guidelines on several occasions, which determine the absolute fracture risk through a combination of age, prevalent fractures, further risk factors, and bone density. These S3 guidelines are generally accepted and implemented in Germany and make a great contribution to realistically determining the individual fracture risk. As Schneider is aware, the guideline group decided—for a number of relevant reasons—against adopting the FRAX risk score in its guideline update in 2009 and in the current draft guideline 2013. We are not able to relate to the overestimate of risk factors as pointed out by Schneider, such as the effect of thyroid-stimulating hormone (TSH) or aromatase inhibitors, in the DVO guidelines. The guideline procedures (including source materials) are transparently explained on the internet. Furthermore, these recommendations are consistent with the S3 guidelines of the breast section in the Arbeitsgemeinschaft Gynäkologischer Onkologie (AGO, the working group for gynecological oncology).

In conclusion, we thank our correspondent for his constructive ideas, but for the reasons just explained we do not see any reason to distance ourselves from our study results and from the conclusions drawn.

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REFERENCES

1. Hadji P, Klein S, Gothe H, Häussler B, Kless T, Schmidt T, Steinle T, Verheyen F, Linder R: The epidemiology of osteoporosis—Bone Evaluation Study (BEST): an analysis of routine health insurance data. Dtsch Arztebl Int 2013; 110(4): 52–7.

On behalf of the authors

Prof. Dr. med. Peyman Hadji
Universitätsklinikum Gießen und Marburg

Silvia Klein
IGES Institut, Berlin
silvia.klein@iges.de

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Professor Hadji works at the Philipps-Universität in Marburg, Germany, and at the Universitätsklinikum Gießen und Marburg GmbH. He has received lecture honoraria and research support from Amgen, Eli Lilly, GSK, Novartis, Nycomed, Pfizer, Procter and Gamble, and Roche. He and Silvia Klein have worked on projects financed by AMGEN and Nycomed.