HIV and bone mineral density

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Editor

Bone mineral density (BMD) loss is a phenomenon considered to be physiologic in elderly adults. However, certain categories of patients may be at higher (e.g., post-menopausal women) or earlier (e.g., patients with chronic viral infections such as HBV or HIV) risk of BMD loss.

Current guidelines recommend an evaluation of bone mineral density (BMD) through dual X-ray absorptiometry (DXA scan) in the general population for women ≥ 65 years of age, for men ≥ 70 years of age, for persons of any age with history of a fragility fracture, or for any patient with suspected bone impairment.

As peak bone mass development takes place during late childhood, adolescence and early adulthood (Mora S, Gilsanz V. *Endocrinol Metab Clin North Am* 2003;32:39-63), bone impairment may represent an important issue for the specific Romanian cohort of HIV-positive patients, “yesterday’s children, today’s young adults”, as they received antiretroviral treatment (ART) early on in childhood, during the period of bone development.

Given the fact that osteoporosis is mainly asymptomatic prior to the first bone fracture, there is an imperative need to cross-sectionally determine BMD and to longitudinally evaluate

the trend and pace of BMD loss in the Romanian cohort, in order to determine the right timing for any interventions deemed necessary to slow down the progression of bone impairment or to prevent future complications such as fragility fractures.

The effect of the viral infection per se and/or that of ART exposure on bone mineralization represent critical areas for research. In 2014 we initiated a national survey for osteo-renal impairment in the Romanian HIV cohort, designed to screen and monitor a total of 1000 patients from all over the country to determine, among other factors, their real level of BMD, using a DXA scan for a much younger population than that targeted by current guidelines. The study also aims to underline variation in the patterns and dynamics of skeletal growth, as currently available bone mass measurements for youth, and normative databases appear to be insufficient (Lewiecki EM, et al. *Bone*. 2008;43:1115-21; Webber CE, et al. *Osteoporos Int*. 2009;20:113-21).

Scanning for bone and renal impairment is essential if we target a healthy life during this long journey for our young HIV-infected patients, particularly as the mean age for the Romanian HIV cohort in 2014 is 24 years. After identifying the status of the population we can start designing and implementing specific guidelines and recommendations for risk factors and general health management, including exercise, nutrition, and lifestyle changes.

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