1. BACKGROUND

In HIV-infected patients receiving antiretroviral therapy (ART), reduced bone mineral density (BMD) has been reported at increasing frequency. The guidelines of the International Society for Clinical Densitometry (ISCD) have recommended diagnosing osteopenia in men under 65 years and in fertile women on the basis of a Z-score of -1. The term “bone mass reduction” (BMR) identified by Z-score values lower than -1 (ISCD recommendation) has been previously suspected by our group to understand the pathophysiological mechanism of gender differences in bone metabolism in HIV-infected patients.

2. OBJECTIVE

The aim of our study was to determine bone gender and gonadal function differences in the prevalence of BMR in HIV-infected patients and to investigate the risk factors associated with BMR.

3. METHODS

Cross-sectional observational study in 2092 HIV-infected intravenous drug users and non-intravenous drug users attending a tertiary referral centre. The inclusion criteria were: Adult patients over 18 years, with at least six months of HAART exposure, and with at least two DXA scans. Patients with previous diagnosis of osteoporosis or fractures were excluded from the study. Z-scores were calculated for the total hip, lumbar spine and femoral neck in males and females. For this analysis we excluded subjects using alendronate and/or VitD therapy, and primary hyperparathyroidism. BMR prevalence was defined for z-score<-1.

4. RESULTS

Table 1. Comparison between baseline demographics, anthropometric, endocrinologic, and HAART variables stratified by gender and stratified by gender and gonadal function differences. The values are expressed as median (range) or percentages. The values of z-scores were calculated for the total hip, lumbar spine and femoral neck in males and females. Inclusion criteria were:
- Age ≥18 years
- At least six months of HAART exposure
- At least two DXA scans

5. DISCUSSION AND CONCLUSIONS

In order to interpret the higher prevalence of lumbar BMR in men we tried to explain any hormonal, anthropometric, virologic and/or therapeutic differences that may have a different impact on trabecular bone in men vs. women and in hypergonadotrophic vs. eugonadotrophic population.

We hypothesized that a gender difference in the prevalence and the natural history of bone disease may help in understanding the pathophysiological mechanism of gender differences. The guidelines of the International Society for Clinical Densitometry (ISCD) have recommended diagnosing osteopenia in men under 65 years and in fertile women on the basis of a Z-score of -1. The term “bone mass reduction” (BMR) identified by Z-score values lower than -1 (ISCD recommendation) has been previously suspected by our group to understand the pathophysiological mechanism of gender differences in bone metabolism in HIV-infected patients.

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