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OSTEOPENIA IN HIV-INFECTED MEN: ASSOCIATION WITH LACTIC ACIDEMIA AND LOWER WEIGHT PRE-ANTIRETROVIRAL THERAPY

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BACKGROUND: Osteoporosis is increasingly recognized in HIV-infected patients, and has been associated with antiretroviral (ARV) therapy, in particular protease inhibitors (PIs).

OBJECTIVES: We assessed bone density (*t*-score, Z-score, and total bone mineral density) by DEXA in a cohort of 221 otherwise well, HIV-infected men recruited to a lipodystrophy (LD) prevalence survey between November 1998 and February 1999 with the following data: demographics, smoking and exercise history, type(s) and duration of all ARV therapy, physician assessed LD (overall and by region), CD4 counts, HIV RNA, fasting metabolic parameters (lipid, glycaemic, lactate, liver function, testosterone), and regional body fat and lean mass (DEXA and L4 abdominal CT).

RESULTS: Thirty-two patients were drug-naïve, 42 were receiving nucleoside analogues (NRTIs) and 147 were receiving NRTI-PI therapy. Mean age was 43 years, 116 (52%) patients had lipodystrophy and 32 (14%) had lactic acidemia (>2.0 mmol/l). Osteoporosis (*t*-score <2.5 SD below normal) was found in seven (3%) patients and osteopenia (*t*-score, -1.0 to -2.5 SD) in 44 (22%). No patient had a fracture since being HIV-infected. Factors independently associated with osteopenia or osteoporosis were higher lactate (odds ratio [OR] 2.39 [95% CI: 1.39-4.11] per 1 mmol/l increase; *P*=0.002) and lower weight prior to commencing antiretroviral therapy (OR 0.94 [95% CI: 0.90-0.98] per 1 kg increase; *P*=0.006). There was no independent association found with any other parameter, including lipodystrophy at any site or NRTI, NNRTI or PI type/duration. Lactic acidemia was in turn associated with current didanosine therapy (OR 6.10 [95% CI: 2.67-13.89];

$P < 0.0001$), current stavudine therapy (OR 2.90 [95% CI: 1.25-6.71]; $P = 0.013$), and a greater rise in CD4 lymphocyte count on therapy (OR 1.02 [95% CI: 1.01-1.04] per 10 cell/mm³ increase; $P = 0.005$).

CONCLUSIONS: Osteopenia in HIV-infected men appears more likely with lower body mass prior to antiretroviral therapy and the presence of NRTI-related lactic acidemia.

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