

Effect of bisphosphonates on the treatment of BMD abnormalities in an HIV-1 infected cohort

Introduction

Treatment with highly active combination of antiretroviral treatment (HAART) increases bone turnover ¹, greatest when treatment includes a protease inhibitor (PI) ^{1,2}. We evaluated the effect of bisphosphonates on BMD evolution in HIV-1 infected individuals requiring therapy for deficient BMD

Methods

All HIV-1-infected individuals receiving either alendronate or ibandronate between May 2007 and August 2011 with available paired DEXA scans pre and post treatment were included. Paired t tests were used to calculate a potential change in BMD at time of follow up scan.

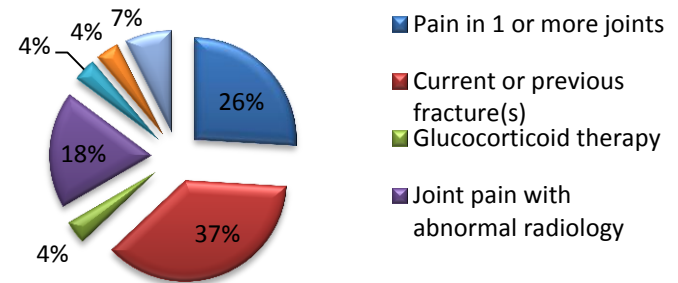
1, Tebas P, Powderly WG, Claxton S et al. Accelerated bone mineral loss in HIV-infected patients receiving potent antiretroviral therapy. *AIDS*. 2000 Mar 10;14(4):F63-7.

2. Brown TT, Qaish RB. Antiretroviral therapy and the prevalence of osteopenia and osteoporosis: a meta-analytic review. *AIDS*. 2006 Nov 14;20(17):2165-74

Results

- Fifty one of 142 individuals identified were suitable for the study. Osteoporotic prevalence was 45% (11 on alendronate, 12 on ibandronate)
- The rest were osteopenic (13 on ibandronate, 14 on alendronate)
- Overall, 26 (51%) individuals received alendronate, of whom 20 (77%) were male [median age of 59 (range: 33-78 years)]. Twenty five (49%) received ibandronate, of whom 24 (99%) were male [median age of 55 (range: 40-81 years)]
- Mean time between pre- and post-treatment DEXA scans was 30.7 months (range: 11-61)

Reasons for bisphosphonate use in osteopenic individuals



Proportion of osteoporotic patients pre and post treatment

	Proportion with osteoporosis (%)		
	Before treatment	After treatment	p-value
Overall	45.1	29.4	0.151
Alendronate	42.3	26.9	0.382
Ibandronate	48.0	32.0	0.387

Conclusion

- Less than half of these patients were followed up with a repeat DEXA scan within 2-3 years of commencing bisphosphonate therapy
- Both alendronate and ibandronate appeared to increase t scores at both lumbar spine and femoral neck without a significant benefit of one therapy over the other
- A non-significant reduction was demonstrated in the proportion of individuals at follow up scan after treatment with both drugs
- Limitations: Retrospective, selection bias at the outset, females could have skewed data and no objective measure of a direct benefit in the treated osteopenic individuals
- Important to address modifiable osteoporosis risk factors such as smoking, alcohol, exercise, and actively treat co-existing calcium and Vitamin D deficiencies.