Truvada and Norvir-Boosted Reyataz More Likely to Cause Bone Loss in ACTG Study

February 23, 2010 By Tim Horn

Truvada (tenofovir and emtricitabine) is more likely to lead to bone loss than Epzicom (abacavir and lamivudine); in addition, Norvir (ritonavir)–boosted Reyataz (atazanavir) is more likely to contribute to bone loss than Sustiva (efavirenz), according to new data from the AIDS Clinical Trials Group (ACTG) reported Thursday, February 18, at the 17th Conference on Retroviruses and Opportunistic Infections in San Francisco.

The study also confirmed that neither Truvada nor Epzicom is associated with fat loss, or lipoatrophy, a feared side effect of some nucleoside reverse transcriptase inhibitors. In fact, Truvada and Epzicom—along with Norvir-boosted Reyataz—were generally associated with healthy limb fat increases.

ACTG 5224s, reported at CROI by Grace McComsey, MD, professor and division chief of Pediatric Infectious Diseases and Rheumatology at Case Western Reserve University in Cleveland, was a substudy of ACTG 5202 (the final results of which were also reported in San Francisco). ACTG 5202 was a 96-week clinical trial that enrolled more than 1,800 people living with HIV who had never before taken ARV drugs. The study participants were split into four groups comparing the safety and efficacy of four popular ARV options among those starting therapy for the first time.One group started a regimen containing Epzicom and Sustiva; another started a regimen containing Epzicom and Norvir-boosted Reyataz; a third started a regimen containing Truvada and Sustiva (now often used together as Atripla); and the last started a regimen containing Truvada and Norvir-boosted Reyataz.

The substudy reported by McComsey evaluated 269 of ACTG 5202's participants for two potentially adverse side effects being seen in people receiving ARV therapy: decreases in bone mineral density (BMD) and fat changes associated with lipodystrophy. Dual energy X-ray absorptiometry (DEXA) scans were used to look for bone loss and both limb fat decreases (lipoatrophy) and trunk fat gains (lipohypertrophy) throughout the study's two-year follow-up period.

Bone Loss

Decreases in BMD were documented in all four treatment groups after therapy was started. However, this was generally self-correcting, though patients in all four treatment groups saw their

BMD levels stabilize at levels below those documented at the start of treatment.

After 96 weeks, decreases in BMD measurements remained significantly lower in the Truvada group compared with the Epzicom group: -3 percent versus -1.3 percent in spinal measurements and -3.9 percent versus -2.6 percent in hip measurements, respectively. Both sets of differences were statistically significant, meaning they were too great to have occurred by chance.

McComsey also noted that, in some patients followed for more than three and a half years in the substudy, those taking Epzicom continued to steadily increase BMD, whereas those receiving Truvada continued to lose BMD.

In the comparison of the third drugs, Norvir-boosted Reyataz was associated with greater spinal BMD decreases: -3.2 percent versus -1.7 percent in the Sustiva group. Both drugs were similar with respect to BMD decreases: -3.1 percent versus -3.4 percent, respectively.

As for bone fractures—the biggest risk associated with decreased BMD—these were similar among all groups. Overall, 5.6 percent of the substudy's participants experienced at least one injury-related bone fracture. However, there were no statistically significant differences in fracture rates between those taking Truvada or Epzicom or those taking Reyataz or Sustiva.

Fat Changes

There were reports of lipoatrophy in the study, but there were no statistically significant differences in the comparisons conducted. Among those receiving Truvada plus either Sustiva or Reyataz, about 14 percent and 16 percent of patients lost 10 percent or more limb fat, respectively. Among those taking Epzicom with either Sustiva or Reyataz, a 10 percent or greater reduction in limb fat was seen in 19 percent and 16 percent, respectively.

It is important to note, however, that limb fat generally needs to decrease by at least 40 percent before lipoatrophy becomes noticeable to patients.

When looking at the overall study population, reductions in limb fat were the exception, not the rule. In fact, patients were more likely to experience limb fat gains while on any of the four regimens. Changes in limb fat were statistically similar among those receiving Epzicom compared with Truvada: +1.7 kg versus +1.1 kg, respectively, in the strict intent-to-treat analysis. In the less-strict on-treatment analysis, Epzicom was associated with greater gains in limb fat than Truvada: +2.1 kg versus 1.2 kg, respectively.

Changes in limb fat were statistically higher among those receiving Norvir-boosted Reyataz compared with Sustiva: +1.9 kg versus +1.0 kg, respectively.
Moderate gains in trunk fat—on the order of 1 to 2 kg—were seen in patients taking Epzicom and Truvada, with no statistically significant differences between the two.

Trunk fat appeared to increase more among those taking Norvir-boosted Reyataz compared with those taking Sustiva (+2.5 kg versus +1.2 kg, respectively).

In conclusion, McComsey reiterated that, compared with Epzicom, Truvada-treated patients had significantly larger declines in spine and hip bone densities, whereas Norvir-boosted Reyataz, compared with Sustiva, was associated with more significant losses in spine BMD but not hip bone density. Both Epzicom- and Truvada-based regimens typically increased limb fat at week 96, and

similar proportions of patients experienced mild lipoatrophy.

© 2026 Smart + Strong All Rights Reserved.
http://beta.docker.poz.com/article/hiv-bone-lipoatrophy-18049-8828