

Changes in body fat measured by DEXA in patients taking different formulations of stavudine

ABSTRACT

Background: Lipoatrophy is a frequent complication of chronic stavudine therapy. Stavudine extended release formulation (stavudine ER) gives lower peak and higher trough levels than the immediate release formulation (stavudine IR), and we hypothesized that the lower peak might result in less lipoatrophy. Objective: To compare the rate of peripheral lipoatrophy between patients taking stavudine ER and stavudine IR. Method: Body composition was measured by dual energy X-ray absorptiometry (DEXA) every 6 months for 18 months in 29 patients taking either stavudine ER or IR as part of a randomized controlled clinical trial. Results: DEXA fat measurements did not differ between the ER and IR groups at baseline, after a median of 32 months on stavudine-containing treatment. Over the 18 months of follow-up in the whole cohort limb fat decreased by a mean of 0.29 ± 0.50 kg ($p = .01$) and leg fat percent decreased by a mean of $1.23\% \pm 1.92\%$ ($p = .001$), whereas trunk fat and trunk-to-limb fat percent ratio did not change significantly. There was no significant difference between the ER and IR groups in the rate of change of any of the fat parameters. At study completion, the proportion of patients with clinical lipodystrophy was similar in the stavudine ER and stavudine IR groups (67% and 64%, respectively; $p = .893$). Conclusion: Stavudine ER does not appear to cause less peripheral lipoatrophy.