The comparative effectiveness of NRTI-sparing dual regimens in emulated trials using observational data from the Swiss HIV Cohort Study

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BACKGROUND
Nucleoside (or nucleotide) reverse transcriptase inhibitors (NRTIs) cause side effects in some patients, prompting the use of either partly or fully NRTI-sparing regimens.

METHODS
We used data from the Swiss HIV Cohort Study to estimate the effectiveness of two new dolutegravir dual regimens relative to the alternative NRTI-sparing dual regimens that our clinicians used previously. We emulated two trials by propensity score matching case patients on the dolutegravir regimen with control patients on an alternative regimen. We analysed the case control sets using a Bayesian Cox model and estimated effectiveness as the percentage still on their trial regimen without virologic failure at 48 weeks.

RESULTS
In a comparison of partly NRTI-sparing regimens, 58 cases treated with dolutegravir were matched to 17 controls treated with boosted darunavir (both with lamivudine or emtricitabine). The estimated difference in effectiveness was 15% (95% credible interval, CrI, 2 to 33) and 12% (95% CrI 0 to 26) in two sequential analyses one year apart. In a comparison of fully NRTI-sparing regimens, 54 cases treated with dolutegravir were matched to 32 controls treated with raltegravir (both with boosted darunavir). The estimated difference in effectiveness was 9% (95% CrI -1 to 21) and 5% (95% CrI -4 to 15) in the two sequential analyses.

CONCLUSIONS
Estimates of relative effectiveness suggest that both dolutegravir regimens are not inferior to these alternative regimens. All four regimens seem suitable for patients needing an NRTI-sparing regimen: there were few virologic failures and few treatment changes due to toxicity.