Effectiveness of TDF+FTC Versus AZT+3TC in Real-world Clinical Practice – An International Comparison

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Background/Objective
Tenofovir/emtricitabine (TDF/FTC) is recommended over zidovudine/lamivudine (AZT/3TC) in HIV treatment guidelines. These two backbones have been compared in clinical trial settings and the objective in this study was to compare their effectiveness in routine clinical practice.

Method
Retrospective analysis of data from the RDI. Patients included were HIV-1 infected adults receiving TDF/FTC- or AZT/3TC-based, three-drug regimens from 2004 onwards in fourteen countries. Comparisons were made in terms of: time to virological failure; time to regimen switch for any reason (persistency), and median changes in CD4 cell counts while on therapy, adjusted for confounding variables. Time to event was modeled using Kaplan-Meier and Cox proportional hazards models. Differences in CD4 counts were evaluated using vanElteren test.

Result
Overall 7,835 cases were identified for TDF/FTC and 9,422 for AZT/3TC. Mean age was 41 years, 83% male. The hazard ratio (HR) for time to virological failure increased over time, from 1.13 (ns) to a HR at one year of 1.58 (95%CI: 1.23-2.03; $p<0.0001$) in favour of TDF/FTC. For persistency the HR was 2.04 (95% CI: 1.75-2.39; $p<0.0001$), in favour of TDF/FTC. AZT/3TC was associated with significantly higher CD4 counts at different time points but the median difference from baseline over the duration of therapy was not statistically different (TDF/FTC: 278, AZT/3TC: 291, $p=0.66$).

Conclusion
These results, using a large multinational dataset from clinical practice, show patients remaining on TDF/FTC longer and developing a more sustained virological response than on AZT/3TC, but with no statistically significant difference in immunological recovery over the duration of therapy.