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Letter

Initiation of antiretroviral therapy with integrase strand-transfer inhibitor-based regimens and reduction of the risk of horizontal transmission of HIV-1

Juan Berenguer[a,b,*], Javier Parrondo[c], Raphael J. Landovitz[d]

[a] Hospital General Universitario Gregorio Marañón, Madrid, Spain
[b] Instituto de Investigación Sanitaria Gregorio Marañón (IiSGM), Madrid, Spain
[c] Parrondo Health, Coslada, Spain
[d] UCLA Center for Clinical AIDS Research and Education, Los Angeles, CA, US

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Dear Editor,

We read with interest the modeling study published by Zhu J et al. showing that initiating antiretroviral therapy (ART) with integrase strand-transfer inhibitor (INSTI)-based regimens can potentially reduce HIV transmission risk significantly when compared to non-INSTI regimens [1].

Our group found similar results, first presented in July 2017 at the 9th IAS Conference [2], and now published in July 2019 in PLoS ONE [3]. We too performed a modeling study that showed that initial use of INSTI-based regimens has the potential to impact HIV-1 horizontal transmission following initiation of ART in treatment naïve men who have sex with men (MSM). In brief, we used discrete event simulation modeling to estimate transmission events during the first eight weeks after initiation of ART as first line therapy for MSM. Simulated transmission events were modeled using inputs from meta-analyses [4] and sexual behavior inputs for MSM derived from those found in the START trial [5]. HIV RNA decay in MSM was modeled from the databases of three clinical trials Single (dolutegravir [DTG] vs. efavirenz [EFV]), Spring-2 (DTG vs. raltegravir [RAL]) and Flamingo (DTG vs. darunavir/ritonavir [DRV/r]). Our model showed that DTG led to 22.72% fewer transmissions than EFV, 0.52% fewer transmissions than RAL, and 38.67% fewer transmissions than DRV/r. The results of several sensitivity analyses confirmed the robustness of the model.

It is reassuring and corroborative that Zhu and colleagues had similar findings in their current analysis.

References

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* Corresponding author.
E-mail address: jbb4@me.com (J. Berenguer).

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