

RESEARCH SUMMARY

# The POTENTIAL IMPACT OF INITIATING ANTIRETROVIRAL THERAPY WITH INTEGRASE INHIBITORS ON HIV TRANSMISSION RISK IN BRITISH COLUMBIA, CANADA



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**INTRODUCTION**

The risk of HIV transmission is associated with viral load level (the amount of virus a person has). The integrase strand-transfer inhibitor (INSTI) regimens used in antiretroviral therapy (ART) have been shown to lead to a faster decay in viral load than other regimens. Therefore, we estimated the potential reduction in HIV transmission risk among individuals initiating on INSTI-based ART, focusing on the gay, bisexual and other men who have sex with men (gbMSM) population in British Columbia (BC), Canada.

**FINDINGS**

* The time it took to reach virologic suppression (two consecutive viral loads <200 copies/mL) for INSTI-based regimens was 21.4 days compared to 58.6 days for non-INSTI regimens
* The risk of HIV transmission during the six months post-ART initiation, partially measured as the average probability of HIV transmission per risky contact, can be reduced by at least 25% for a person with high viral load level at ART initiation with INSTI-based ART regimens
* The overall risk of HIV transmission, measured as the average number of new HIV infections, was highly dependent on viral load at ART treatment initiation and the individual's risk level, and to a lesser extent on the stage of HIV infection.

**PUBLIC HEALTH IMPLICATIONS**

* Initiating ART on INSTI-based regimens has the potential to reduce HIV transmission risk among individuals with high baseline viral load levels, especially among those with high levels of sexual activity

**METHODS**

We used mathematical modeling to explore the potential impact of initiating gbMSM on INSTIs, as opposed to other regimens in preventing HIV transmission during the six months post-ART initiation. This study focused on individuals who were ART-naive, initiated ART between 2011 and 2016 with at least one year of follow-up.

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Antiretroviral Therapy= A combination of medications that suppress the HIV virus.

