LOW HEPATITIS C VIRUS REINFECTION IN PEOPLE WHO INJECT DRUGS TREATED WITH DIRECT ACTING ANTIVIRALS IN KENYA

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Background:
Hepatitis C virus (HCV) infection is a global epidemic affecting over 70 million people. The World Health Organization Global Health Sector Strategy on Viral Hepatitis provides guidance to direct resources to low- and middle-income countries (LMICs) by focusing on high-risk populations like people who inject drugs (PWID), although data in LMIC settings are sparse. Despite all-oral direct acting antivirals that are highly effective, due to their high cost, there's concern about treatment failure and reinfection.

Methods:
We used a prospective longitudinal cohort design to assess the rate of HCV recurrence following DAA therapy in PWID (n=100) in Kenya at two timepoints following HCV treatment completion (9 and 15 months). Peripheral blood samples were collected to detect evidence of recurrent HCV viremia and a behavioral survey was administered at the 9-month timepoint. Phylogenetic analysis was used to differentiate reinfection from relapse. The reinfection rate was calculated using the mid-point between the end of treatment and the last HCV RNA positive test result.

Results:
Four of the 100 participants had recurrent HCV viremia (1.76 per 100 person-years, 95% CI 0.67-4.67) over a total of 226.6 person-years. Two of the recurrent cases were determined to be relapses resulting from virologic breakthrough and two were cases of reinfection for a reinfection rate of 0.88 per 100 person-years (95% CI, 0.22-3.51). Both reinfected participants were male, younger than 30 years, who reported daily injected heroin 2-3 times/day and accessing needle and syringe programs but not medications for opioid use disorder. One of the reinfected participants reported unstable housing.

Conclusion:
In this cohort of PWID in Kenya, HCV reinfection was noted to be low. While additional support is needed for those at highest risk of reinfection, this study supports expanding DAA treatment access in LMIC settings, to achieve the WHO strategic plan to eliminate HCV.

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