

Researchers observe upward trend in hepatitis C infection rates among HIV+ men who have sex with men

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While sexual contact is not the most efficient means of hepatitis C (HCV) transmission, there have been several reports of outbreaks of sexually transmitted HCV in HIV-positive men who have sex with men (MSM). HCV infections are more likely to become persistent and to lead to progressive liver disease in people who are HIV-infected, even if they are receiving HIV treatment. Factors underlying these infections in HIV-positive MSM are only partially understood.

Researchers at NYU's Center for Drug Use and HIV Research

(CDUHR) at the College of Nursing (NYUCN) have conducted a systematic review and meta-analysis of studies characterizing the incidence of the sexual transmission of HCV among HIV-positive MSM. The review was recently published in *AIDS*, the official journal of the International AIDS Society.

"The purpose of our study was to explain why these outbreaks are occurring and understand whether the increase in reporting indicates a real trend" said principal author, Holly Hagan, PhD, a professor at NYUCN and Co-Director of CDUHR who leads the HCV Synthesis Project. "Understanding the causes and the magnitude of the problem will help identify subgroups for targeted intervention."

HCV is a blood-borne infection, predominantly transmitted through injection drug use; among people who inject drugs (PWID) the incidence of new infections is high, between 10-40 cases of infection per 100 person years of observation. To ensure the scope of their review was limited to the sexual transmission of HCV among their target cohort, the authors excluded any study that incorporated MSM who had a history of drug injection.

More than 13,000 individuals were followed in 15 unique studies to observe 497 cases of HCV seroconversion over 93,100 person-years using incidence density estimation. The NYU researchers found approximately 0.53 HIV-positive MSM acquired an HCV infection in 100 person-years of observation.

"Putting this another way, if one thousand HIV-positive MSM were followed for one year each, approximately five would acquire HCV," said Dr. Hagan. "This is far lower than the rates among PWID. However, when we pooled the data across studies and looked at incidence in relation to calendar time, we saw an increase."

According to the researchers, in 1991, the annual HCV incidence rate among HIV-positive MSM was estimated at 0.42 per 100 person-years. By 2010, it had increased three-fold, to 1.09 new infections per hundred person-years, and in 2012 the estimate was 1.34, showing that rate of increase was on the rise.

"If the trend continues, current incidence of HCV infections may be as high as 1.92 new infections per 100 person-years—meaning, were we to follow 1,000 members of this cohort over the next year, we'd likely find that approximately twenty acquired HCV," notes Dr. Hagan.

Unprotected, receptive anal sex and sex while high on non-injected drugs was associated with greater risk of infection. In particular, one study found sex while high on methamphetamine was associated with a 28.6-fold elevated risk of HCV infection.

The researchers also examined HCV re-infection following successful HCV treatment, and found that it was 20 times higher than the rate of initial infection in HIV-positive MSM, at 11 re-infections over 100 person-years. In some studies, participants were treated and reinfected multiple times.

"All of this data indicates the existence of a subgroup of HIV-positive MSM with recurring sexual exposure to HCV in whom the rates may begin to approach the risk of HCV infection among PWID," said co-author Ashly E. Jordan, MPH, Associate Research Scientist and Project Director of the HCV Synthesis Project at CDUHR.

Dr. Hagan and her team point out further study is required to obtain a fuller understanding of the causal pathways in order to identify effective strategies for such a program.

"Ideally, we'd like to see the development of an HCV prevention

program for HIV-positive MSM that addresses both high-risk sex and drug use behavior," said Dr. Hagan.

More information: "Incidence of sexually transmitted hepatitis C virus infection in HIV-positive MSM: a systematic review and meta-analysis." [DOI: 10.1097/QAD.0000000000000834](https://doi.org/10.1097/QAD.0000000000000834)

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