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HIV, Hepatitis B Virus, and Hepatitis C Virus Prevalence Among High-Risk Populations in South India

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EDITOR: HIV, HEPATITIS B VIRUS (HBV), and hepatitis C virus (HCV) share same route of transmission, which accounts for the increased epidemic of HIV, HBV, and HCV coinfections.[1] All cause serious health problems in developing countries,[2] and together HIV and viral hepatitis account for major cause of morbidity and mortality worldwide especially in developing countries.[3]

We retrospectively analyzed stored serum samples collected from people who attended Y.R. Gaitonde Centre for AIDS research and education (YRG CARE) for HIV testing between 2009 and 2010 ($n = 1,612$). Of these participants, 428 (26.6%) reported heterosexual risk (HSR) behavior and 1,184 (73.4%) reported injection drug user (IDU) risk, at the time of testing. The self-selected high-risk population largely comprised men ($n = 1,421$, 88.2%) with a median age of 35 years (interquartile range: 29–40). Overall, 31.1% of testers were found to be HIV positive ($n = 502$). Interestingly, HIV positivity was higher among those reporting HSR than those reporting IDU risk, with 48% ($n = 207/428$) reporting HSR and 25% ($n = 295/1,184$) reporting IDU risk ($p < .0001$) (Fig. 1).

Hepatitis B surface antigen (HBsAg) was tested for 1,612 samples and found 131 (8.1%) to be HBV infected, and of these, HIV/HBV coinfection was seen in 32/1,612 (2%) individuals; all those who had HBsAg positive tests were also positive for hepatitis B core antibody (HBcAb). In contrast to our findings on HIV infection, HBV infection was more common among those reporting IDU risk than those reporting HSR, as 10/428 (2.3%) HBsAg positive individuals reported HSR and 121/1184 (10.2%) HBsAg positive individuals reported IDU risk ($p < .0001$).

Among individuals who were HBsAg negative, we tested HBcAb as a marker of past infection for 862 samples and found 505/862 (58.6%) were positive for HBcAb, this includes 108/418 (25.3%) HSR and 397/444 (89.4%) IDU risk individuals ($p < .0001$). This result further shows that HIV positive participants had evidence of more past HBV infection, 326 (69.2%), than HIV uninfected, 179 (43%) ($p < .0001$), which could be due to the spontaneous clearance of HBsAg.

Of 1,612 samples tested for HCV antibody, 618 (38.3%) samples were found to be HCV seropositive. Of 618 individuals, 614 (51.9%) reported IDU risk and only 4 (0.9%) individuals reported HSR ($p < .0001$). HIV infection among HCV seropositive individuals was seen in 256/1,612 (15.9%), of which majority were IDU risk, 252/1,184 (21.3%), compared with HSR individuals, 4/428 (0.9%) ($p < .0001$). Similarly, the prevalence of HIV/HCV and HBV/HCV coinfections, as well as HIV/HBV/HCV infections, was also high among IDU risk participants. HBV infection among HCV seropositive individuals was seen in 38/1,612 (2.4%) individuals, all were IDU risk individuals ($p < .0001$). HIV and HBV coinfection with HCV seropositivity was observed in 27 individuals (1.7%), all had IDU risk behavior, 27/1,184 (2.3%) ($p < .0001$). HIV and HCV seropositivity with past HBV infection was seen in 246/1,612 (15.3%) individuals, of which most individuals were IDU risk, 243/1,184 (20.5%), compared with HSR 3/428 (0.7%) ($p < .0001$) (Fig. 1).

In conclusion, the prevalence of HIV infection was higher among those reporting HSR than those reporting IDU risk, and prevalence of HBV infection was low among HIV infected. As expected, the overall prevalence of HIV, HBV, and HCV coinfections was high among IDU risk participants.

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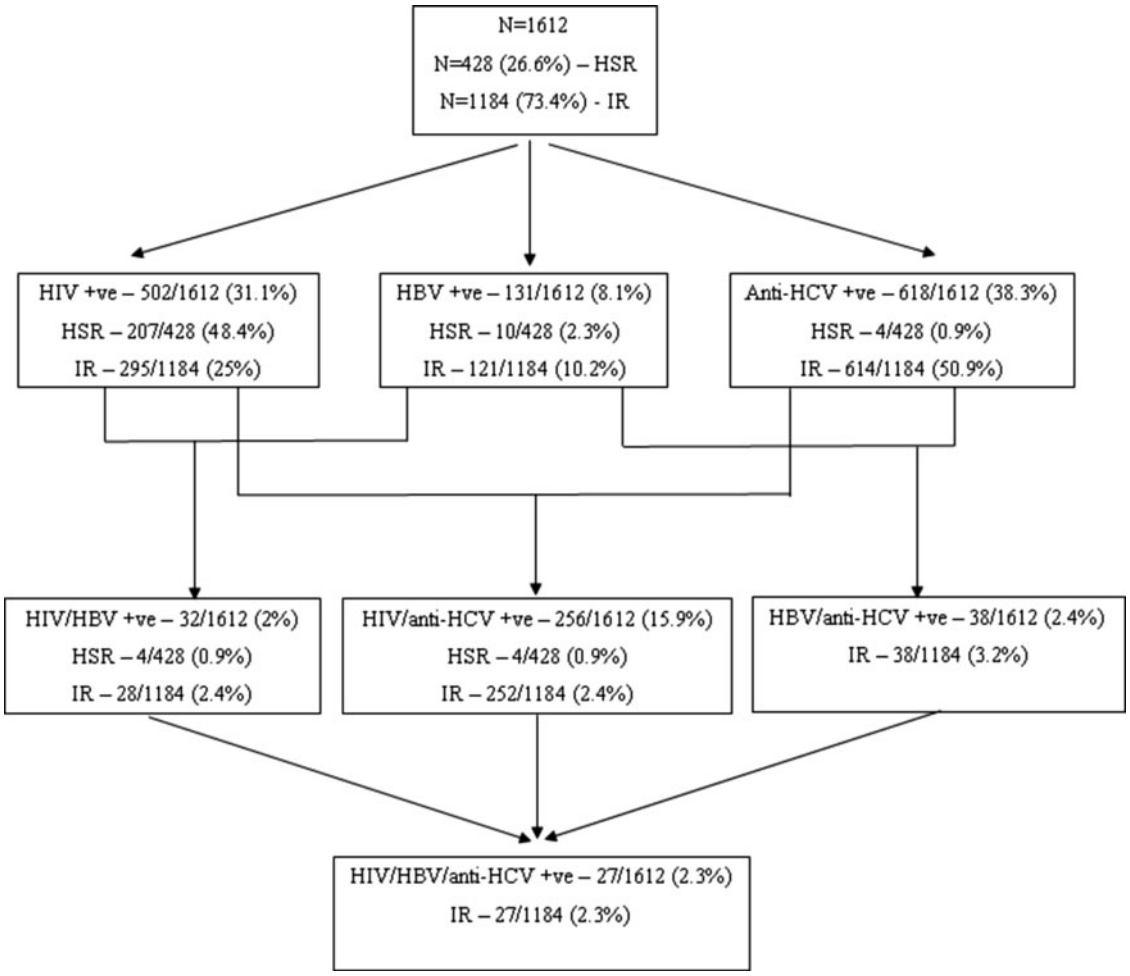

FIG. 1. Study flowchart. HBV, hepatitis B virus; HCV, hepatitis C virus; HSR, heterosexual risk; IR, injection drug use risk.

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Author Disclosure Statement

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