

**Influence of HIV-related immunodeficiency on the risk of hepatocellular carcinoma.**

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**OBJECTIVE:** To investigate HIV-related immunodeficiency as a risk factor for hepatocellular carcinoma (HCC) among persons infected with HIV, while controlling for the effect of frequent coinfection with hepatitis C and B viruses. **DESIGN:** A case-control study nested in the Swiss HIV Cohort Study. **METHODS:** Twenty-six HCC patients were identified in the Swiss HIV Cohort Study or through linkage with Swiss Cancer Registries, and were individually matched to 251 controls according to Swiss HIV Cohort Study centre, sex, HIV-transmission category, age and year at enrollment. Odds ratios and corresponding confidence intervals were estimated by conditional logistic regression. **RESULTS:** All HCC patients were positive for hepatitis B surface antigen or antibodies against hepatitis C virus. HCC patients included 14 injection drug users (three positive for hepatitis B surface antigen and 13 for antibodies against hepatitis C virus) and 12 men having sex with men/heterosexual/other (11 positive for hepatitis B surface antigen, three for antibodies against hepatitis C virus), revealing a strong relationship between HIV transmission route and hepatitis viral type. Latest CD4+ cell count [Odds ratio (OR) per 100 cells/mul decrease = 1.33, 95% confidence interval (CI) 1.06-1.68] and CD4+ cell count percentage (OR per 10% decrease = 1.65, 95% CI 1.01-2.71) were significantly associated with HCC. The effects of CD4+ cell count were concentrated among men having sex with men/heterosexual/other rather than injecting drug users. Highly active antiretroviral therapy use was not significantly associated with HCC risk (OR for ever versus never = 0.59, 95% confidence interval 0.18-1.91). **CONCLUSION:** Lower CD4+ cell counts increased the risk for HCC among persons infected with HIV, an effect that was particularly evident for hepatitis B virus-related HCC arising in non-injecting drug users.