

# Faster HIV progression and development of HCV coinfection among PWID in Ukraine: retrospective cohort study

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**Background:** HIV-related mortality remains high in Ukraine with about half of deaths happening due to tuberculosis. Until recently, parenteral route of transmission accounted for the majority of new HIV cases. Additionally, population of people who inject drugs (PWID) in Ukraine has high prevalence of hepatitis C. We hypothesize that HIV among PWID is characterized with disadvantageous course with increased risk of developing tuberculosis, hepatitis C and rapid progression.

**Materials & Methods:** Routine clinical data of 930 HIV-infected patients aged 15-65 years admitted to Poltava (Ukraine) HIV/AIDS clinic in 2003-2010 were considered as a retrospective cohort and analyzed using Cox proportional hazards regression model. All patients were observed prior to ART prescription, 44% were men, and 47% had experience of injecting drugs. Outcome measures included time to diagnosis of tuberculosis, viral hepatitis C and fourth stage of HIV infection. Time of observation was considered starting from the first positive HIV test. Route of transmission was considered a primary predictor with control of gender, age, and experience of incarceration.

**Results:** All three outcomes developed earlier among patients who acquired HIV due to injection drugs use compared to those with sexual route of transmission. HCV infection was found in 507 patients (82% among PWID), HR=3.5 (95%CI 2.84.4). Tuberculosis was diagnosed among 210 patients (71% among PWID and 67% among men) with HR=1.6 (95%CI 1.22.2). Fourth stage of HIV was diagnosed among 266 patients (67% among PWID) with HR=1.5 (95%CI 1.22.0). Hazards of all three outcomes increased with age, and men were more likely to develop tuberculosis than women (HR=1.7 95%CI 1.22.3). PWID demonstrated longer term between first positive HIV test and linkage to care.

**Conclusions:** PWID are found to be the group of HIV patients who are characterized with increases risk of HIV progression and earlier development of HCV coinfection which can lead to increased mortality. This is presumably caused by late linkage to care and delayed ARV treatment. Emphasized HIV care and support cascade activities aimed at PWID could be an effective means to overcome the revealed peculiarities of this highrisk group.