

# Response to first-line antiretroviral treatment among human immunodeficiency virus-infected patients with and without a history of injecting drug use in Indonesia

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## ABSTRACT

**Background** There is a common belief that injecting drug use (IDU) is associated with lower uptake, retention and success of antiretroviral treatment (ART) in human immunodeficiency virus (HIV)-infected patients. We examined this in an Indonesian setting, where IDU is the main risk factor for HIV infection. **Methods** Patient characteristics and response to ART were recorded for all patients diagnosed with HIV infection in the referral hospital for West Java (40 million people). Kaplan–Meier estimates and Cox’s regression were used to compare mortality, loss to follow-up and virological failure between patients with and without a history of IDU. **Result** A total of 773 adult HIV patients (81.9% IDUs) presented between January 1996 and April 2008. IDUs had a median CD4 cell count of 33 [interquartile ratio (IQR), 12–111] cells/mm<sup>3</sup> compared to 84 (IQR, 28–224) cells/mm<sup>3</sup> in non-IDUs. Among patients with a history of IDU, 87.7% were coinfecting with hepatitis C (HCV). Mortality was associated strongly with CD4 count; after 6 months of ART, 18.3, 20.3, 7.1 and 0.7% of patients with CD4 cell counts <25, 25–99, 100–199, respectively, ≥200/mm<sup>3</sup> had died ( $P < 0.0001$ ). Mortality [adjusted for CD4; hazard ratio (HR) = 0.65; 95% confidence interval (CI) 0.35–1.23], loss to follow-up (HR = 0.85, 95% CI 0.51–1.41) and virological failure (HR = 0.47, 95% CI 0.19–1.13) were not significantly different in IDUs and non-IDUs. **Conclusion** Intravenous drug users (IDUs) in Indonesia with HIV/acquired immune deficiency syndrome tend to have more advanced disease but respond similarly to non-IDUs to antiretroviral therapy.

**Keywords** Antiretroviral therapy, highly active, HIV infections, Indonesia, intravenous, substance abuse, treatment outcome.

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## INTRODUCTION

Indonesia is facing one of the most rapidly growing human immunodeficiency virus (HIV) epidemics in Asia which, except for Papua, is driven mainly by injecting drug use (IDU) [1]. Currently, HIV prevalence is still low (0.2%) in the general population, but among intravenous drug users (IDUs) HIV prevalence rates higher than 50% have been found [2]. Unprotected sex, also with commer-

cial sex workers, is common among IDUs and it seems a matter of time before Indonesia, which has the fourth biggest population in the world, has a more generalized HIV epidemic [1]. Until now, however, the majority of HIV-infected Indonesians who are in need of antiretroviral treatment (outside Papua) are IDUs.

A number of factors may hamper treatment of HIV-infected IDUs in Indonesia. First, access to care is limited because drug use is illegal and therefore patients may be