

# The Incidence and Risk Factors of Virologic Failure in HIV-infected Patients Receiving the First Regimen of Antiretroviral Therapy

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## ABSTRACT

**Background:** Since antiretroviral therapy (ART) has been widely available in Thailand, the survival and quality of life among HIV-infected patients are markedly improved. However, some patients experience virologic failure and HIV drug resistance has developed. Currently, the data of the incidence of virologic failure and its associated factors in Thailand is still limited.

**Methods:** A retrospective cohort study was carried out among HIV-infected patients who were initiated with ART during 2006-2007 at Ramathibodi Hospital and had followed up at least for a year. The incidence of virologic failure and the associated factors were assessed.

**Results:** There were 110 patients with mean (SD) age of 38.6 (10.6) years and 51.8% were males. Median (IQR) baseline CD4 was 63 (21-186) cells/mm<sup>3</sup>. Of all, 98.2% received NNRTI-based regimens in which 95.3% were nevirapine-based regimens. Stavudine/lamivudine and zidovudine/lamivudine were the most common nucleoside reverse transcriptase inhibitor (NRTI) backbones of the regimens. During a median (IQR) follow-up duration of 44.3 (35.8-50.2) months, 26 (23.6%) patients developed virologic failure. The incidence of virologic failure was 6.96/100 person-years. From Kaplan-Meier analysis, the probabilities of virologic failure at 6, 12, 24, 36, and 48 months of first regimen ART were 1.9%, 5.4%, 13.6%, 20.1%, and 22.0%, respectively. From Cox proportional hazard model, only poor adherence was significantly associated with virologic failure [hazard ratio 2.028; 95% CI, 1.050-3.922; p=0.035]. Demographics, baseline CD4 and type of regimen were not associated with virologic failure (p>0.05).

**Conclusions:** Incidence of virologic failure of the first regimen ART is 6.96/100 person-years and the rate is higher over time. Poor adherence is the only factor associated with virologic failure, regardless of baseline CD4 and ART regimens. Intervention to improve the adherence on ART in this population is essentially needed. Education for better adherence and its importance should be continuously performed. (*J Infect Dis Antimicrob Agents* 2011;28:161-68.)

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