

Virological Failure and Drug Resistance During First Line Anti-Retroviral Treatment in Indonesia

Azzania Fibriani,^{1*} Rudi Wisaksana,² Agnes Indrati,³ Yovita Hartantri,² David van de Vijver,¹ Martin Schutten,¹ Bacht Alisjahbana,² Primal Sudjana,² Charles A.B. Boucher,¹ Reinout van Crevel,⁴ and Andre van der Ven⁴

¹Department of Virology, Erasmus Medical Centre, Erasmus University, Rotterdam, The Netherlands

²Internal Medicine Department, Hasan Sadikin Hospital, Bandung, Indonesia

³Clinical Pathology Department, Hasan Sadikin Hospital, Bandung, Indonesia

⁴Department of General Internal Medicine, Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands

The virological response and development of drug resistance during first-line anti-retroviral treatment (ART) were studied in Indonesia where the majority of patients infected with HIV have a history of injecting drug use, which is often linked with lower treatment adherence and development of drug-resistance. As many as 575 patients starting ART between September 2007 and March 2010 in Hasan Sadikin Hospital Bandung were followed prospectively. Clinical and laboratory monitoring was performed every 6 months. Plasma samples with HIV-RNA ≥ 400 copies/ml were examined for drug resistance mutations. Most patients were male (72.3%), 59.7% had a history of injecting drug use, and the median CD4+ cells count before start of ART was 35 cells/mm³ (IQR 10–104). From 438 HIV patients with HIV-RNA measurements, 40 (9.1%) subjects had HIV-RNA ≥ 400 copies/ml after 24 weeks (median follow-up 16 (IQR 8–25) months). Of these failing patients 16 (47%) subjects had drug resistance mutations, predominantly M184V (35.3%), Y181C (23.5%), K103N (11.7%), and TAMs (11.7%). A history of treatment discontinuation ≥ 1 month, reported by 5.3% (23) of patients, was strongly associated with virological failure (adjusted OR 12.64, 95% CI 4.51–35.41); and a history of injecting drug use was not (OR 0.75, 95% CI 0.38–1.46). This is the largest and most systematic evaluation of virological response to first line ART in Indonesia. Patients in this cohort responded well to first line ART, with low rates of virological failure and drug resistance. A history of injecting drug use should not be a reason to withhold ART in this setting. **J. Med. Virol.**

© 2013 Wiley Periodicals, Inc.

KEY WORDS: antiretroviral therapy; asia; HIV drug resistance; viral load

INTRODUCTION

The development of antiretroviral treatment has dramatically reduced morbidity and mortality among HIV-infected individuals, and has turned HIV infection into a chronic condition for many patients. The success of HIV treatment depends on maintaining long-term viral suppression, which also avoids development of HIV resistance to anti-retroviral drugs. Unfortunately, HIV-RNA plasma measurements and drug resistance testing are often not generally

Grant sponsor: "IMPACT" (Integrated Management of Prevention and Care and Treatment of HIV/AIDS), a Collaborative Research and Implementation Program of Padjadjaran University, Bandung, Indonesia; Grant sponsor: Maastricht University and Radboud University Nijmegen, the Netherlands; Grant sponsor: Antwerpen University, Belgium; Grant sponsor: IMPACT is Funded by the European Commission; Grant number: SANTE/2005/105-033; Grant sponsor: Fellowship From the Radboud University (R.W.); Grant sponsor: Post Doc Fellowship From the Royal Dutch Academy of Arts and Sciences (KNAW) (B. A.); Grant sponsor: VIDI Grant From the Netherlands Foundation of Scientific Research (NWO; R.vC.); Grant sponsor: European Commission; Grant number: SANTE/2005/105-033; Grant sponsor: Netherlands Foundation of Scientific Research (NWO)

Disclosure statement: None of the authors declares any conflict of interest.

*Correspondence to: Azzania Fibriani, Department of Virology, 's Gravendijkwal 230, P.O. Box 2040, Rotterdam 3000 CA, The Netherlands. E-mail: a.fibriani@erasmusmc.nl

Accepted 25 February 2013

DOI 10.1002/jmv.23606

Published online in Wiley Online Library (wileyonlinelibrary.com).