UNIVERSITAS INDONESIA

VARIABILITAS DAN DISTRIBUSI SUBTIPE HIV-1, SERTA HUBUNGANNYA DENGAN KARAKTER DEMOGRAFI, DARI POPULASI HIV POSITIF DI INDONESIA, DALAM KURUN WAKTU TAHUN 1993 - 2000

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PROGRAM STUDI ILMU KESEHATAN MASYARAKAT
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Tesis ini diajukan sebagai
Salah satu syarat untuk memperoleh gelar
MAGISTER KESEHATAN

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PROGRAM PASCASARJANA
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PROGRAM PASCA SARJANA
STUDI ILMU KESEHATAN MASYARAKAT
KESEHATAN REPRODUKSI
Tesis, Januari 2003

ERLIN LISTIYANINGSIH

Variabilitas dan Distribusi Subtipe HIV-1, serta Hubungannya dengan Karakter Demografi, dari Populasi HIV Positif di Indonesia, dalam Kurun Waktu Tahun 1993 - 2000

xvii + 92 halaman, 24 tabel, 9 gambar, dan 2 lampiran

ABSTRAK

Epidemi HIV di negara-negara Asia terjadi lebih lambat bila dibandingkan dengan negara-negara belahan dunia yang lain. Sejak mulai ditemukan kasusnya yang pertama (tahun 1987), epidemi HIV di Indonesia relatif stabil. Namun, sejak kurang lebih empat (4) tahun yang lalu (tahun 1998) menurut laporan Ditjen P2MPLP DepKes RI telah terjadi lonjakan insiden kasus HIV positif per tahun secara mengkhawatirkan terutama pada kelompok resiko tertular secara kontak seksual. Beberapa hasil penelitian akhir-akhir ini mengatakan adanya kondisi '*emerging epidemic*' HIV pada kelompok resiko heteroseksual.

Untuk lebih dapat meningkatkan upaya pencegahan penularan dan penatalaksanaan penderita, serta memperkirakan kelanjutan epidemi yang akan terjadi, perlu dilakukan karakterisasi epidemi HIV yang sedang berlangsung di Indonesia pada beberapa periode terakhir terutama dalam hubungannya dengan terjadinya kenaikan tajam kasus-kasus yang telah dilaporkan.

Penelitian ini dilakukan dengan metode *Case-Series*, berlangsung selama tujuh tahun mulai tahun 1993 hingga 2000, dengan populasi sampel adalah individu-individu yang telah terinfeksi HIV dari daerah epidemi Jakarta, Papua, Bali, dan beberapa kasus dari daerah epidemi lain. Kasus-kasus HIV positif tersebut sebagian besar (66 %) berasal

dari suku Jawa, 13 % dari suku Papua asli, dan 11 % dari suku Bali, dan hampir semua berada pada usia reproduktif yang tertular HIV dengan cara kontak seksual (98 %), dengan proporsi kasus laki-laki (56 %) sedikit lebih tinggi dari pada proporsi kasus perempuan (44 %).

Hasil pemeriksaan teknik PCR (Polymerase Chain Reaction) dan RT-PCR (Reverse Transcryption Polymerase Chain Reaction) diketahui bahwa di Indonesia, dalam masa penelitian terjadi pergeseran corak subtipe. Pada awal penelitian hanya ditemukan subtipe B, kemudian berkembang dengan ditemukannya subtipe E maupun subtipe B/E dengan proporsi yang terus meningkat. Analisa keserupaan genetik dengan menggunakan teknik Heteroduplex Mobility Assay (HMA) menunjukkan bahwa HIV-1 di Indonesia mempunyai keserupaan genetik dengan strain referensi HIV-1 dari Thailand, USA, Central African Republic, Brazil, dan India.

Untuk melihat hubungan antara subtipe HIV-1 dengan variabel-variabel penelitian dilakukan analisa statistik bivariat dan multivariat. Subtipe HIV-1 pada populasi kasus HIV positif pada penelitian ini berhubungan statistik bermakna dengan lokasi penemuan kasus, tetapi tidak dengan suku, umur maupun jenis kelamin. Populasi kasus HIV positif dari lokasi Papua berpeluang 6,4 kali (95% CI = 1,52 – 26,98) untuk memiliki subtipe E HIV-1, tetapi 0,05 kali peluangnya untuk memiliki subtipe B HIV-1, bila dibandingkan dengan populasi kasus HIV positif dari lokasi Bali. Populasi kasus HIV positif bersuku Papua mempunyai kemungkinan 3,06 kali lebih tinggi (95 % CI = 0,823 – 11,375) memiliki subtipe E HIV-1, dan 0,24 kali lebih rendah (95 % CI = 0,02 – 1,24) memiliki subtipe B HIV-1 dari pada populasi HIV positif bersuku bukan Papua. Peluang untuk mencapai status AIDS pada kasus HIV positif dengan subtipe E lebih rendah 0,21 kali (95% CI = 0,046 – 0,959) bila dibandingkan dengan peluang kasus HIV positif dengan subtipe B. Progresifitas kearah AIDS pada kasus-kasus HIV pada penelitian ini memiliki hubungan statistik yang bermakna dengan subtipe HIV-1, tetapi tidak dengan lokasi penemuan, suku, umur, maupun jenis kelamin kasus.

Daftar bacaan : 109 (1987-2002)

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Thesis, Januari 2003

ERLIN LISTIYANINGSIH

Subtype Variability of Human Immunodeficiency Virus Type-1 and Their Relationship to the Demographic Characterictic of Indonesian HIV Cases, from 1993 to 2000

xvii + 92 pages, 24 tables, 9 pictures, 2 addendum

ABSTRACT

HIV epidemic in Asia arrived relatively late, and HIV infection is still confined largely to population known to be at high risk (IDU, sex workers, and men who have sex with men). However there is dramatic increase of the HIV infection incidence rate among high-risk population in several Asian Countries since past few years, Indonesia is the one example. While HIV-1 subtype E is the most prevalent strain than other subtype circulating in Southeast Asia, little is known about genetic subtype of HIV-1 responsible for the fulminating epidemic in Indonesia.

Here we *gp41 env* RT-PCR and *gp120 env* HMA subtyped the isolates of a case-series of 255 HIV cases identified in high prevalence regions of Indonesia between 1993 and 2000, and then investigated the correlation between genetic subtype to multiple demographic characteristics and disease progression using bivariate and multivariate analysis. Most (98%) of the cases resulted from sexual contact, and 2% from vertical transmission; 56% are male and 44% are female. The ethnicity of the cases is Javan (66%), Balinese (11%) and Papuan (13%). 67% of the female cases and 14% percent of the male cases were commercial sex workers. 14% of the male cases were military and 8 % of the female cases were housewives.

In 1993/94 only subtype-B viruses were observed, but by 1996 subtype-E had become, and remains, the major circulating subtype. It is suggested that HIV-1 subtype

circulates in Indonesia has shifted from HIV-1 subtype B to HIV-1 subtype-E, indicate that HIV-1 subtype-E is the most transmissible and prevalent HIV-1 subtype through heterosexual contact in Indonesia. However, subtype-B virus remains the most prevalent in Bali. HMA analysis identified isolates having homology to subtype-B isolates BR20 (Brazil), TH14 (Thailand) and SF162 (USA) during 1993/94, then broadening to include subtype-E isolates TH22 (Thailand), TH06 (Thailand) and CAR7 (Central African Republic). In 2000, two isolates homologous to IN868 (India) were identified in Papuan samples.

No correlation was observed between gp41-established subtype and age, gender, or ethnicity, but location. The probability of having HIV-1 subtype-E among HIV infected people in Papua was measured to be 6.4 times greater (95% CI = 1,52 – 26,98) than in Bali, whereas the probability of having HIV subtype-B among HIV infected people in Bali is 20 times greater than in Papua and 4.7 times greater than Jakarta. Papuans were observed to have 3.06 times greater probability (95% CI = 0.823 – 11.375) of having a subtype-E infection than non-Papuan, and smaller probability (OR = 0.24 ; 95% CI = 0.054 – 1.769) of having a subtype-B infection than non-Papuans.. HIV cases with subtype-E HIV-1 were observed to have 0,21 times probability to progress to AIDS (95% CI = 0.046 – 0.959) than probability of HIV cases with subtype B HIV-1 in Indonesia. Disease progression was observed to correlate to HIV-1 subtype, but not age, gender, ethnicity, nor location.

Reference : 109 (1987-2002)

PERNYATAAN PERSETUJUAN

Tesis ini telah disetujui, diperiksa dan dipertahankan dihadapan Tim Penguji Tesis Program Pascasarjana Universitas Indonesia

Depok, Januari 2003

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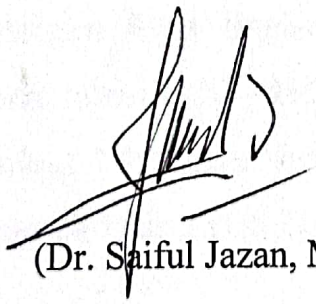

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