Reserve transcription polymerase chain reaction (RT-PCR) sebagai uji alternative untuk deteksi infeksi Human Immunodeficiency Virus type-I (HIV-1)

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Abstrak

Human Immunodeficiency Virus type-I (HIV-1) merupakan penyebab sindroma penurunan sistem imun tubuh yang disebut dengan Acquired Immunodeficiency Syndrome (AIDS). Infeksi HIV-I di dunia dan Indonesia cenderung meningkat. Pemeriksaan yang cepat dan spesifik diperlukan untuk mencegah penyebaran infeksi HIV-I. Berbagai teknik telah dikembangkan untuk deteksi infeksi HIV-I. Pada penelitian ini dikembangkan pemeriksaan RT-PCR HIV-1 Mikrobiologi FKUI (in-house RT-PCR) untuk mendapatkan uji alternatif deteksi HIV-1. Sebanyak 46 plasma dan serum kelompok berperilaku risiko tinggi yang berkunjung ke klinik VCT . RSUP Sanglah Denpasar, telah diperiksa dalam penelitian ini. Serum diperiksa dengan 3 kit rapid test yang berbeda yaitu DetermineTM HIV-1/2 (Abbott), ImmunoCombR HIV 1 & 2 BiSpot (Organics), dan SerodieR HIV-1/2 (Fujirebio Inc.). Plasma diuji dengan pemeriksaan RTPCR generasi I menggunakan primer spesifik terhadap daerah gag dan RT-PCR generasi 2 menggunakan primer spesifik terhadap daerah protease dari genom HIV-1. Hasil rapid test menunjukkan dari 46 sampel, sebanyak 26 serum (56,5%) reaktif dan 20 serum (43,5%) non-reaktif. Tingkat sensitivitas, spesifisitas, nilai duga positif, dan nilai duga negatif RT-PCR generasi 1 secara berturut-turut adalah 80,8%, 95%, 95,5%, dan 79,2%, sedangkan rasio kemungkinan positif dan negatif adalah 16,2, dan 0,2. Pemeriksaan RTPCR generasi 2 menunjukkan tingkat sensitivitas 65,4%, spesifisitas 90%, nilai duga positif 89,5%, nilai duga negatif 66,7%, rasio kemungkinan positif 6,5, dan rasio kemungkinan negatif 0,4. Teknik RT-PCR yang menggunakan primer tersebut dapat mendeteksi HIV pada semua stadium klinis WHO pada kelompok ini. Sensitivitas dan spesifisitas RT-PCR generasi 1 lebih baik daripada RT-PCR generasi 2, tetapi, masih lebih rendah daripada baku emas, Secara keseluruhan, RT-PCR pada penelitian ini belum dapat direkomendasikan sebagai uji altematif baik uji skrining maupun uji konfirmasi dalam mendeteksi infeksi HIV-1.
<hr><i>Human Immunodeficiency Virus type 1 (HIV-1) can cause decrease of immune response which is called Acquired Immunodeficiency Syndrome (AIDS). HIV-l infection in the world and Indonesia tends to increase. Many techniques were developed to detect HIV-1 infection. A specific and rapid diagnosis is needed to prevent transmission of HIV-1 infection. In this study, we performed RT-PCR HIV-1 Microbiology FKUI (in-house RT-PCR) as an alternative test to detect HIV-1. Forty six plasmas and serums from high risk behavior group who visited VCT Clinic Sanglah General Hospital, Denpasar were used in this study. Serums were tested with 3 different rapid test kits i.e. Determine ° IIIV-112 (Abbott), immunoComb HIV I & 2 BiSpot (Orgenics), and Serodia ' HIV-112 (Fujirebio Inc.). Plasmas were tested with I generation RT-PCR which used specific primers to gag region in HIV-1 genome and specific primers to protease region in IIIV-1 genome for 2nd generation RT-PCR. Results of rapid test demonstrated 26 serums (56.5%) were reactive and 20 serums (43.5%) were non-reactive. Sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) of 1st generation RT-PCR was 80.8%, 95%, 95.5%, 79.2%, whereas positive likelihood ratio (LR +) and negative likelihood ratio (LR -) was 16.2, and 0.2, respectively. The 2"d generation RT-PCR showed sensitivity, specificity, PPV, NPV, LR (+), and LR (-

) was 65.4%, 90%, 89.5%, 66.7%, 6.5, and 0.4, respectively. These in-house RT-PCR could detect HIV-1 in all WHO clinical staging in this group. This study showed that lsi generation RT-PCR gives better results than 2"d generation RT-PCR. But still inferior than rapid test to detect HIV-1 infection. Overall, RT-PCR in this study has not been recommended yet as an alternative test to detect HIV-I infection.</i>