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High genetic variation of Hepatitis B virus among Indonesian and its problems

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Indonesia has many ethnic groups of people, who live in as many as 17,000 islands. The prevalence of each HBV subtype and genotype varies markedly with different geographical regions and different ethnics. Indonesia had a moderate to high endemicity of hepatitis B virus (HBV) infection. HBsAg seroprevalence declined from 9.4% into 1.4 – 4.8% in Indonesia during the past 15 years of the national vaccination program to all baby at birth. Genotypes B and C were predominant, from B3/ adw2 in the west until C11/ adrq+ in the most east of Indonesia. Genetic analysis of the envelope, a determinant region of HBsAg showed several mutations such as T126I and T143S, which have been reported to be considered as vaccine escape mutants. They might play a role in the appearance of occult HBV infection and/or unsuccessful vaccination. Whether the difference in genotypes and subtypes between the vaccine strain and the HBV strains prevailing in the area influences the vaccine efficacy should be carefully examined. The low coverage of birth dose of HB vaccination, the HBV geographic-specific subtype-distribution in local area, and other factors may impact the prevalence of HBV infections and the efficacy of HB universal vaccination program in Indonesia. The challenges of delivering the first dose of hepatitis B vaccine at birth and genotype/ subtype specific designed vaccine should be consider.

Biography

Maria I. Lusida is a Clinical Microbiologist. She received her Ph.D. degree from Kobe University, Japan in 2001 for her study on Molecular Biology of hepatitis C virus and hepatitis B virus and had postdoctoral training in 2006-2007 in the same laboratory. She currently involves in the Indonesia-Japan Collaborative Research Center for Emerging and Reemerging Infectious Diseases (CRC-ERID) at Institute of Tropical Disease, Airlangga University. She is an active member of several organizations including American Society for Microbiology (ASM), Asia-Pacific Society of Medical Virology (APSMV), Indonesian Association of Clinical Microbiology, and others. Her work on hepatitis B and C viruses has been published in some scientific peer reviewed journals.

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