

ABSTRACT

Epstein-Barr virus (EBV) and human herpesvirus 6 (HHV-6) are related viruses which belong to the human herpesvirus group. Infection by these two viruses in human populations are known to be ubiquitous. Seroconversion of the viruses usually happen in early life. Early life infection by EBV usually causes mild symptoms in young children. However, if primary infection of EBV is delayed until adolescent or young adult age, infectious mononucleosis may be the clinical manifestation. In HHV-6 primary infection, some cases manifest in a childhood disease named exanthem subitum. This project is aimed at providing updated EBV and HHV-6 seroconversion profiles in Malaysia.

A total of 969 sera were collected from various locations in Malaysia. Indirect immunofluorescence assay (IFA) was used to detect IgG antibodies against EBV and HHV-6. The P3HR-1 EBV-positive cell line was used as the EBV viral capsid antigen (EBV-VCA) producer. HHV-6 infected human cord blood mononuclear cells were used to produce HHV-6 antigen for IFA. IgG-VCA screening by enzyme-linked immunosorbent assay (ELISA) using an ELISA kit was also carried out on 862 sera randomly selected from the 969 sera tested by IFA. IFA was found to be the more reliable and repeatable method.

The overall seroprevalence (IgG-VCA) for EBV in Malaysia is 91.3%. Overall seroprevalence of HHV-6 is slightly lower, at 90.6%. Infection by either virus is ubiquitous in Malaysia. Primary infection by these herpesviruses happens most

frequently in early life, at the age range of 1-3 years old. Compared to EBV, HHV-6 seroconversion is earlier, most of the children aged 2 years old have seroconverted.

Since EBV seroconversion is 100% by the time the children are 9 years old, infectious mononucleosis in young Malaysian adults is not of significant concern. The present study found that both EBV and HHV-6 infections are independent of sex, race and the regions in Malaysia from where the sera were collected.