

Risk factors for Nipah virus infection among pteropid bats, Peninsular Malaysia

ABSTRACT

We conducted cross-sectional and longitudinal studies to determine the distribution of and risk factors for seropositivity to Nipah virus (NiV) among *Pteropus vampyrus* and *P. hypomelanus* bats in Peninsular Malaysia. Neutralizing antibodies against NiV were detected at most locations surveyed. We observed a consistently higher NiV risk (odds ratio 3.9) and seroprevalence (32.8%) for *P. vampyrus* than *P. hypomelanus* (11.1%) bats. A 3-year longitudinal study of *P. hypomelanus* bats indicated nonseasonal temporal variation in seroprevalence, evidence for viral circulation within the study period, and an overall NiV seroprevalence of 9.8%. The seroprevalence fluctuated over the study duration between 1% and 20% and generally decreased during 2004–2006. Adult bats, particularly pregnant, with dependent pup and lactating bats, had a higher prevalence of NiV antibodies than juveniles. Antibodies in juveniles 6 months–2 years of age suggested viral circulation within the study period.

Keyword: Nipah virus; Viruses; Risk factors; Seroprevalence; Bats; Pteropid bats; *Pteropus vampyrus*; *Pteropus hypomelanus*; Reservoir hosts; Malaysia.