

Title	Detection Of Asymptomatic Dengue Infection
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Reference	Technology Review Report - 008/2018, online: http://www.moh.gov.my/index.php/database_stores/store_view_page/30/324

Aim

The objective of this technology review was to evaluate the effectiveness, cost-implication, safety and organisational issues of detecting asymptomatic dengue infection.

Conclusions and results

A total of 143 records were identified through the Ovid interface and PubMed, and two were identified from other sources (references of retrieved articles). There were 19 full text articles included in this review comprised of two diagnostic accuracy studies, four cohort studies and 13 cross sectional studies. The studies were conducted in Vietnam, Thailand, China, Saudi Arabia, Pakistan, India, Malaysia, Taiwan and Singapore.

There was very limited diagnostic accuracy studies retrieved for detecting asymptomatic dengue infection. The accuracy of NS1 in detecting asymptomatic dengue infection could not be determined due to limited number of study (one study) with limited sample size (17 individuals). Indirect ELISA was reported to have accuracy of 83% in detecting symptomatic and asymptomatic dengue infection compared to gold standard test (PRNT₅₀). Serology test involving ELISA were frequently used in incidence and seroprevalence studies of asymptomatic dengue infection.

Generally, the incidence of asymptomatic dengue infection was found to be higher compared to symptomatic dengue infection. Inapparent to symptomatic (I:S) ratio ranged from 0.9:1 to 2.5:1. However, viral load or viraemia level in asymptomatic patients was found to be lower compared to symptomatic patients.

Very limited evidence retrieved to suggest that several factors such as symptomatic dengue incidence and dengue serotype circulation affects the incidence of inapparent and symptomatic dengue infection among school children.

There was also very limited evidence retrieved to suggest that asymptomatic and pre-symptomatic DENV-infected people were more infectious to mosquitoes compared to symptomatic people. However, there was no retrievable evidence on transmission of dengue virus from mosquitoes to human among asymptomatic infection.

There was no evidence retrieved on the cost-effectiveness, safety and organisational issues on detection of asymptomatic dengue infection.

Recommendations (if any)

Based on the above review, serology test may be used for detection of asymptomatic dengue infection. However, programme for detecting asymptomatic dengue infection is not advocated due to insufficient evidence on the transmission.

Methods

Electronic databases were searched through the Ovid interface: Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE® Daily and Ovid MEDLINE® 1946 to Present, EBM Reviews - Cochrane Central Register of Controlled Trials - December 2018, EBM Reviews - Cochrane Database of Systematic Reviews - 2005 to December 2018, EBM Reviews - Health Technology Assessment – 4th Quarter 2018, EBM Reviews – NHS Economic Evaluation Database 4th Quarter 2018. Searches were also run in PubMed database and U.S. Food and Drug Administration (USFDA) website. Google and Google Scholar was also used to search for additional web-based materials and information. Additional articles were identified from reviewing the references of retrieved articles. Last search was conducted on 13th January 2019.

Further research/reviews required

No

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