



THE DIAGNOSIS OF SCRUB TYPHUS IN RURAL HOSPITAL USING DOT-ELISA RAPID TEST KIT

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Abstract

In Thailand, scrub typhus has been recognized for more than 50 years. The first case was reported in 1952. Scrub typhus is one of the important tropical diseases which are known as the medical problem in Thai people, especially in the military soldiers who are on duty along the border line. Scrub typhus is an important febrile disease of humans caused by the bacterium *Orientia* (formerly *Rickettsia tsutsugamushi* (Hyashi)). *O.tsutsugamushi* is a gram negative, intracellular, rod-shaped (coccobacillus) bacterium. It transmitted transovarially (from adult female to eggs) as well as transstadially (from egg to larva to adult) to humans and rodents by the bite of infected-larval trombiculid (chigger) mites, which are obligate human parasites. Rodents, particularly rats, serve as principal reservoir hosts for *O.tsutsugamushi* and rat's mites, *Leptotrombidium sp.*, in larval chigger stage act as vector. Infection in man is transmitted by the chigger bite. After the incubation period of 7 to 14 days, the patient usually develops high fever, chill, headache, rash and eschar lesion. Scrub typhus can be diagnosed by clinical and laboratory diagnosis. We prospectively recruited pediatric patients with acute fever from Nakhornping hospitals. Dot-ELISA test for scrub typhus was done in the hospitals and then compared with immunofluorescent assay (IFA), which is the gold standard technique for serodiagnosis of scrub typhus. Among 167 pediatric patients from July 2007 to June 2008, scrub typhus was diagnosed by dot-ELISA test kit in 93 patients incidence, 55.69 percent. The results indicate that scrub typhus is common among pediatric patients with acute fever in rural area of Chiang Mai, Thailand. The results of dot-ELISA rapid test kit 98.20 percent match compared with the gold standard of IFA technique and can be readily done in rural hospitals. It could be useful for diagnosis of scrub typhus in hospitals that immuno-fluorescent assay is not available.

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