

Seropositivity of rickettsioses in East Malaysia 2016-2020

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ABSTRACT

Introduction: Rickettsioses is one of the zoonotic diseases that can cause febrile illness in affected people, mainly in the Asia-Pacific region. It is caused by obligate intracellular cocco-bacilli bacteria that are transmitted through bites of mites, fleas, and ticks. This organism can be classified into spotted fever group and typhus group. **Objective:** This retrospective study aimed to study the trend and distribution of rickettsial infections throughout the 5 years 2016–2020 in East Malaysia, i.e., Sabah and Sarawak. **Materials and methods:** Institute of Medical Research (IMR) received a total of 556 serum samples from suspected patients of rickettsial infection who were admitted to hospitals in Sabah and Sarawak from 2016 until 2020. All the samples received were tested for the presence of rickettsial antibodies (IgM and IgG) using the indirect immunoperoxidase (IIP) method. There are 3 types of rickettsial antigens fixed to each antigen slide, i.e., *Orientia tsutsugamushi*, *Rickettsia typhi*, and TT118. A titre of $\geq 1:50$ is considered seropositive. **Results and conclusion:** About 74.6% (415/556 cases) of total serum showed the presence of rickettsial antibodies, either single or co-infection within these three groups of infection. Sarawak showed higher seropositivity cases of rickettsial infection at 57.3% (238/415 cases) compared to Sabah at 42.7% (177/415 cases). In 2016, about 90.9% (60/66 cases) of suspected patients had antibodies against rickettsioses. Out of 415 seropositive cases, 67.0% (278/415 cases) were male patients compared to females, about 33.0% (137/415 cases). Patients in the age group of 50–59 years old had the highest number of seropositive cases, 19.5% (81/415 cases) compared to other age groups. Only 5.1% (21/415 cases) of patients under 10 years old were infected by rickettsioses. This finding shows that rickettsioses is still endemic in East Malaysia. Even though this disease is treatable with antibiotics, it is commonly misdiagnosed as its manifestations are likely similar to other bacterial febrile illnesses. Awareness of the diseases by medical staff is important in order to reduce morbidity and mortality related to rickettsioses.