



## The epidemiology and clinical findings of melioidosis disease in North Borneo (Sabah), Malaysia: a three years review

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### Abstract

Melioidosis is a deadly endemic disease in Malaysia, however, studies on the epidemiology and clinical findings of Melioidosis patients are still scarce, particularly in East Malaysia. This study aims to understand Melioidosis epidemiology and the clinical spectrum of patients in Sabah, Malaysia. A retrospective study was performed on 249 confirmed Melioidosis infection cases from December 2015 to November 2018. The patients' medical records such as demographic data and clinical findings were evaluated. Melioidosis cases are predominant among the patients with a mean age of 50.0 years ( $\pm 15.4$  years), male gender ( $p < 0.001$ ), and Kadazan-Dusun ethnicity ( $n = 84, 33.73\%$ ). Most of the patients were from the Emergency Department (37.90%), followed by the Medical Ward (24.19%). The most common symptom is respiratory organ system failure ( $p = 0.046$ ), while Diabetes Mellitus ( $n = 79, 44.13\%$ ) was identified as a major risk factor in Melioidosis infection. Elevated Neutrophil counts ( $p < 0.001$ ) were also observed in the majority of the patients. *B. pseudomallei* isolates in this study were highly susceptible to Ceftazidime ( $p = < 0.001$ ) and Imipenem ( $p = < 0.001$ ). Death caused by Melioidosis was reported in 70 patients (28.11%) whose age is greater than 45 years (71.43%). Overall, this study provides useful insight for clinical judgment from epidemiological data and clinical findings of Melioidosis and may prevent mortality. Melioidosis prognosis may be poor but this study suggests that the disease should not be set aside during routine differential diagnosis, particularly among male patients aged above 45 years old with respiratory organ failure symptoms and Diabetes Mellitus as underlying diseases and elevated Neutrophil count. The prescription of Ceftazidime and Imipenem as antibiotics is still relevant for the intensive therapy of Melioidosis in this region due to its effectiveness against all *B. pseudomallei* isolates. A similar study at the national level can be conducted to confirm the findings from this study for better prognosis and management of melioidosis.

**Keywords:** Melioidosis, Epidemiology, Clinical findings, Risk factors, Symptoms, Burkholderia pseudomallei.