

## **A 1-year cross-sectional study on the predominance of influenza among hospitalized children in a tropical area, Kota Kinabalu, Sabah**

### **ABSTRACT**

Background: Children are at higher risk of influenza virus infection, and it is difficult to diagnose. They are also responsible for the transmission of influenza because of their longer viral shedding compared to adults. In Malaysia, studies on influenza in children are scarce, and as a result, policy decisions cannot be formulated to control the infection. Hence, the objective of this study is to determine the prevalence and epidemiological characteristics of influenza among children with upper respiratory symptoms in the Sabah state of Malaysia. Methods: A cross-sectional study with a simple random sampling was conducted among children with upper respiratory symptoms in Sabah from 1 March 2019 to 29 February 2020. Patients admitted to a pediatric ward of Sabah Women and Children's Hospital who presented with a fever  $>38^{\circ}\text{C}$  and cough within 48 h of admission were enrolled in this study. A nasopharyngeal swab was taken, and influenza was diagnosed by lateral flow test. Clinical features of influenza-positive children were compared with children whose results were negative. Results: A total of 323 nasopharyngeal samples were collected, and 66 (20.4%) of them were positive for influenza. Fifty-six (85%) were infected by influenza A whereas ten (15%) were by influenza B virus. Higher temperature (aOR 2.03, 95% CI 1.296–3.181), less activity (aOR 2.07, 95% CI 1.158–3.693), and seizure (aOR 4.2, 95% CI 1.614–10.978) on admission were significant risk factors associated with influenza in children. Meteorology parameters such as humidity and rainfall amount were statistically significant at 95% CI [1.133 (1.024–1.255)] and 95% CI [0.946 (0.907–0.986)]. Conclusion: The prevalence of influenza was high among children with upper respiratory symptoms, and they were infected predominantly with the influenza A virus. Children presented with seizures, less activity, and fever were the significant risk factors for influenza. Influenza vaccination should be prioritized as preventive measures for children.