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Hospital Trends in the Pre-COVID 19 Era: A 5-year Trend Analysis of Mortality related to Viral Pneumonia and Acute Respiratory-related Events in Malaysian Public Hospitals

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ABSTRACT

Introduction: Pneumonia has been reported as one of the leading causes of deaths in Malaysia. Furthermore, the number of hospital admissions and in-hospital deaths associated with pneumonia and acute respiratory-related events is expected to increase during the current COVID-19 pandemic. However, understanding about pneumonia is still sparse on the trend of in-hospital mortality associated with those conditions in Malaysian public hospitals before the pandemic. **Methods:** We conducted a cross-sectional analysis on data from 135 public hospitals between 2012 and 2016 to determine the 5-year trend of in-hospital mortality associated with viral pneumonia and acute respiratory-related events. We also explored the demographic distribution and the mortality trend associated with those conditions by hospital category (State, Major Specialist, Minor Specialist, Non-Specialist). **Results:** Within the 5-year study period, a total of 29844 in-patients died of viral pneumonia and acute respiratory-related events, with a preponderance of males, those of age 61-80 years old and Bumiputera. The annual (age-sex-adjusted) hospital case-fatality rates ranged from 3.66% to 10% but were consistently highest for the State (7.49% - 10%) and Major Specialist (7.31% - 9.56%). In addition, the rates showed an increasing trend for all hospital categories, with an average rate of change between 0.8% and 6.5%. **Conclusion:** Findings from this study can set the baseline against which future surveillance of mortality related to viral pneumonia and acute respiratory-related events can be benchmarked. In addition, the epidemiological data on mortality during the pre-pandemic years is crucial to help gauge the impact of the COVID-19 pandemic on population health.

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Respiratory Organisms among Patients with and without Respiratory Illnesses during COVID-19 Pandemic (ROPRICoP)

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ABSTRACT

Introduction: Common respiratory viruses and bacteria still circulate and potentially contribute to hospital admission during the COVID-19 pandemic. We investigated the prevalence of pathogens among patients with symptomatic respiratory illnesses compared to the asymptomatic population, during the second wave of COVID-19 in Central Sarawak, Malaysia. **Methods:** We conducted a case-control study using archived nasopharyngeal swab (NPS) specimens from severe acute respiratory illness (SARI) and influenza-like illness (ILI) patients and surveillance population in Sibu Hospital and Bintulu Hospital between 15 March and 30 June 2020. The specimens were examined for common respiratory viruses and bacteria using a commercial PCR assay. **Results:** Of the 434 NPS specimens, 269 (62·0%) were females; 61 (14·1%) were below 18 years old, while 27.0% (n=117) patients were older than 65 years old. Majority of the patients were symptomatic (306, 70·5%). Symptomatic patients were more likely to have positive virus results with an odds ratio (OR) of 4.46 (95% CI: 1.87, 10.64, p <0.001). In contrast, there was no significant difference in the prevalence of bacteria in both groups of patients (p>0.005). The three commonest viruses detected were human rhinovirus, adenovirus, and respiratory syncytial virus (RSV); for bacteria they were Streptococcus pneumoniae and Haemophilus influenzae. **Conclusion:** Amidst the ongoing COVID-19 pandemic, there was a high prevalence of pathogens among patients with symptomatic respiratory illness and asymptomatic population during COVID-19 pandemic. Virus-positive patients, specifically RSV and adenovirus, were more likely to get symptoms during the COVID-19 pandemic. Bacteria from nasopharyngeal swabs appear to be commensal rather than pathogenic.