

COVID-19, the omicron variant and its association with croup in Pediatrics; a single center study in Hong Kong

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Abstract

Background: The 5th wave of the COVID-19 pandemic in Hong Kong was dominated by the omicron variant, which may have more upper airway involvement affecting children. This pilot study aims at analyzing any associations between the COVID-19-omicron-variant and croup in children. **Methods:** This retrospective study reviewed electronic medical records of patients admitted to Tuen Mun Hospital of Hong Kong from 1 January 2018 to 31 March 2022 with diagnostic code of croup (ICD-10 code J05.0). Patients were categorized into non-COVID period (1 January 2018 - 31 December 2019); COVID-pre-omicron period (1 January 2020 - 31 December 2021) and COVID-omicron period (1 January 2022- 31 March 2022). Disease associations and severity were compared through incidence rates, Westley Croup Severity Score, length of hospital stay, medications use, respiratory support and intensive care unit admissions. **Results:** The rate of infection of COVID-19 in croup patients admitted during COVID-omicron period (90%) was significantly higher than those in the COVID-pre-omicron period (3.6%, $p < 0.001$). They also had a higher Westley Score (moderate + severe disease: COVID-omicron: 56.7%; COVID-pre-omicron: 22.4%; $p=0.004$; non-COVID: 24.8%, $p < 0.001$), longer hospital stay (median: COVID-omicron 3.00 days ; COVID-pre-omicron: 2.00 days, $p < 0.001$, non-COVID: 2.00 days, $p=0.034$), and higher dexamethasone requirements (mean : COVID-omicron = 0.78mg/kg; COVID-pre-omicron= 0.49mg/kg, $p < 0.001$; non-COVID =0.58mg/kg , $p=0.001$) while compared to those of the COVID-pre-omicron period and non-COVID period. **Conclusion:** The omicron variant of COVID-19 is a significant contributing factor to croup and can lead to more severe disease in children of Hong Kong.

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COVID-19 the omicron variant and its association with croup in Pediatrics; a single center study in Hong Kong available at <https://authorea.com/users/492162/articles/574936-covid-19-the-omicron-variant-and-its-association-with-croup-in-pediatrics-a-single-center-study-in-hong-kong>

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Statistical tables for COVID-19, the omicron variant and its association with croup in Pediatrics; a single center study in Hong Kong available at <https://authorea.com/users/492162/articles/574936-covid-19-the-omicron-variant-and-its-association-with-croup-in-pediatrics-a-single-center-study-in-hong-kong>