

Paediatrics Oral Presentation

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NEW ONSET DIABETES BEFORE AND DURING THE COVID-19 PANDEMIC AND FACTORS ASSOCIATED WITH DIABETIC KETOACIDOSIS IN SELECTED TERTIARY HOSPITALS

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INTRODUCTION

New onset diabetes mellitus (DM) and diabetic ketoacidosis (DKA) among children have increased worldwide following the COVID-19 pandemic. This study aimed to determine the frequency of new-onset DM and DKA during the COVID-19 pandemic as compared to the pre-pandemic period and to determine the factors associated with DKA among children with new onset DM.

METHODOLOGY

A cross-sectional retrospective study was conducted at four paediatric endocrine tertiary hospitals in Klang Valley, Selangor among all patients with new-onset diabetes during two-time intervals, 2015 to 2019 (before the pandemic) and 2020 to 2022 (during the pandemic). Data on patients' demographics and clinical characteristics were collected.

RESULT

Three hundred eighty-eight patients with new onset DM were included. Both new-onset DM and DKA showed increased relative frequencies after the onset of the pandemic (17.2% in 2021, 14.1% in 2020, 11.2% in 2019, 12.8% in 2018) and (18.5% in 2021, 16.2% in 2020, 9.3% in 2019, 10.3% in 2018) respectively. The relative frequencies of patients with new-onset type 1 diabetes mellitus (T1DM) increased during the pandemic, but type 2 diabetes mellitus (T2DM) cases declined. Median BMI was found to be higher among patients with new-onset T2DM during the pandemic compared to those who developed T2DM pre-pandemic ($p=0.04$). Patients with T2DM also had a shorter duration of symptoms ($p=0.019$) and lower HbA1c ($p=0.008$) during the pandemic. On multiple logistic regression, a younger age, lower BMI, T1DM, higher blood glucose and higher HbA1c were factors significantly associated with new-onset DKA.

CONCLUSION

There was an increase in Type 1 DM and DKA following the pandemic. Awareness of at-risk groups and associated clinical characteristics enables early detection of new-onset DKA and DM. Early surveillance of T2DM among persons with higher BMI should be emphasised. Public health education and campaigns for lifestyle modification, infection control precautions and COVID-19 vaccination should be actively implemented.