EP_A039

A SNAPSHOT OF TYPE 1 DIABETES CARE AMONG ADULTS IN MALAYSIA: DATA FROM A SINGLE ACADEMIC MEDICAL CENTRE

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INTRODUCTION/BACKGROUND

There is a dearth of data on adults living with Type 1 Diabetes (T1D) in Malaysia.

METHODOLOGY

This descriptive study aims to systematically collect current data and identify gaps among adults living with T1D in Malaysia. Data was extracted from electronic medical records of patients registered under the T1D clinic at Universiti Malaya Medical Centre (UMMC). All patients aged 18 and above in 2023 were included.

RESULTS

There was a total of 107 patients with T1D (mean age 42.0 ± 12.7, mean HbA1c 8.0 ± 1.6%, mean BMI 24.5 ± 4.1 kg/m^2). The majority were Chinese (52.3%), followed by Malays (24.3%) and Indians (23.4%). The median age at T1D diagnosis was 18.0 years (IQR: 14.0). Almost half (42.1%) presented with diabetic ketoacidosis (DKA) at diagnosis. One in four patients had diabetes-associated autoantibody tests done. Autoantibody positivity was in this order: GADA (22.4%), ICA (6.5%), IA2A (5.6%) and IAA (1.9%). Co-morbid autoimmune conditions were reported in 16.2%, of which thyroid disease (61.1%) was most common. In terms of treatment, the majority were on analogue insulin (89.7%) delivered using multiple daily injections (79.4%). Of the 22 (20.6%) patients using insulin pumps, 50% were using manual pumps, whereas the others were using either sensor-augmented pumps or advanced hybrid closed-loop systems. Most (81.3%) patients used self-monitoring of blood glucose (SMBG) whereas 23.4% employed continuous glucose monitoring (CGM) systems for glycemic surveillance. Incident hypoglycemia within the preceding three months was reported among 60.7%, the majority (95.4%) of which were mild, and none reported severe. The incidence of DKA within the preceding six months was 4.7%. Retinopathy (19.6%) was the most prevalent complication, followed by kidney disease (15%) and atherosclerotic cardiovascular disease (7.5%).

CONCLUSION

This data serves as a baseline for a registry of local T1D patients, whereby future longitudinal analyses may unveil patterns of disease outcomes to guide clinical care unique to our setting.

EP_A040

PRELIMINARY ASSESSMENT IN MANAGEMENT OF DIABETIC KETOACIDOSIS IN A TERTIARY CARE SETTING

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INTRODUCTION/BACKGROUND

Diabetic ketoacidosis (DKA) exacts a huge burden on the healthcare system despite numerous advancements in anti-diabetic therapies and updated clinical practice guidelines. The incidence of DKA for Type 1 and Type 2 DM is between 4.6 to 8 episodes per 1000 people.

METHODOLOGY

An assessment was made of the admissions of DKA into a tertiary centre in East Malaysia to evaluate the characteristics of these patients and identify potential management pitfalls. All patients admitted with a diagnosis of DKA and referred to the endocrine team in Hospital Tengku Ampuan Afzan, Kuantan between December 2023 to March 2024 were analysed. Data was collected for age, date of admission, HbA1c, total daily dose of insulin, DKA history and SGLT2 inhibitor use, amongst others.

RESULTS

Over four months, a total of 28 patients were assessed. There were 4 Type 1 and 24 Type 2 DM patients. Two type 1 DM patients were readmitted with DKA during the same period while 5 patients in total were admitted with DKA within the preceding 6 months. The mean age was 45 (± 17) years old and the mean HbA1c around their presentation was 11.2% (± 4.2%). Two patients were on SGLT2 inhibitors while 15 patients were on insulin with a mean total daily dose of 39 (± 17) units. Five patients were admitted to the ICU and the most common predisposing cause for DKA

was missed medications. The mean time taken to resolve the DKA was 931 (± 574) minutes.

CONCLUSION

Based on the results, the number of readmissions for DKA is worrying and the patients admitted also have high insulin doses, highlighting a possible consequence of over-insulinization. A longer period of evaluation is necessary to investigate the effect of SGLT2 inhibitors use on DKA admissions, as well as further focus on the causes of prolonged time for DKA resolution which may impact the length of hospitalization.

EP_A041

ONE-YEAR TREATMENT OUTCOMES WITH SUBCUTANEOUS SEMAGLUTIDE AT HOSPITAL QUEEN ELIZABETH II: A RETROSPECTIVE ANALYSIS

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INTRODUCTION/BACKGROUND

Glucagon-like Peptide-1 receptor agonists (GLP-1 RAs) mimic endogenous GLP-1, improving glycemic control and promoting weight loss. Nevertheless, there is limited data available on the effect of semaglutide use among type 2 diabetes (T2D) patients undergoing insulin therapy, particularly those with high insulin requirements.

METHODOLOGY

We aimed to investigate the effects of the addition of subcutaneous semaglutide to a standard regimen of insulin on T2D patients, focusing on changes in HbA1c levels, body weight and total daily dose (TDD) of insulin. In this retrospective chart review, T2D patients who received once-weekly subcutaneous semaglutide with insulin were recruited from the Endocrine Unit of the Hospital Queen Elizabeth II (HQE II) from 2021 to 2023. Follow-up assessments occurred at 3-6 months and 9-12 months post-initiation, with the recording of key parameters such as HbA1c, weight, insulin TDD and adverse events.

RESULTS

Our study recruited a total of 35 patients and found that there were significant improvements across all parameters. HbA1c levels decreased from a mean of 8.9% at baseline to 7.7% at 9-12 months, representing a reduction of 1.2% (p <0.001). Weight decreased from a mean of 92.0 kg at baseline to 84.2 kg at 9-12 months, with a mean reduction of 7.7 kg (-8.4%) (95%CI: 4.9-10.6, p <0.001). Insulin TDD decreased from a median of 72u (40 - 114) at baseline to 48u (24 - 80) at 9-12 months (p <0.001). Six individuals experienced gastrointestinal side effects, with one discontinuing due to intolerable diarrhea. In the subgroup with insulin resistance, there were profound reductions in TDD of insulin used without compromising glycemic control.

CONCLUSION

The study confirmed the efficacy of once-weekly semaglutide in managing T2DM patients on insulin therapy, including those on basal-bolus and pre-mixed regimens. Further research is recommended to assess its effects on patients with high insulin requirements.

EP_A042

RISK OF KETOACIDOSIS WITH LUSEOGLIFLOZIN IN TYPE 2 DIABETES MELLITUS PATIENTS ON MODERATE DOSE INSULIN THERAPY: A RANDOMISED CONTROL TRIAL

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INTRODUCTION/BACKGROUND

Sodium-glucose cotransporter-2 (SGLT2) inhibitors, one of which is Luseogliflozin, are associated with a recognized risk of euglycemic diabetic ketoacidosis (DKA) particularly in patients on insulin therapy.

METHODOLOGY

This study aimed to assess the risk of ketoacidosis with Luseogliflozin in patients with type 2 diabetes mellitus (T2D) on moderate doses of insulin. This study involved patients who were attending the Endocrine Clinic, with stable disease and no recent acute events. The participants were randomized to either add-on Luseogliflozin to standard medical therapy or standard medical therapy only. Ketoacidosis was assessed using fasting blood and urine ketone pre- and post-intervention. The study duration was 12 weeks. Independent t-test was performed to assess changes in ketone levels. Pearson's Correlation was performed to determine the relationship between ketone levels with HbA1c and fasting blood glucose.