CONCLUSION

Maternal gestational hyperthyroidism causes a hyperthyroid fetal environment due to increased thyroxine transfer which leads to suppression of the fetal hypothalamic-pituitary-thyroid axis and central hypothyroidism of the newborn. Primary hypothyroidism could be a result of transplacental passage of antithyroid drugs(ATD) during pregnancy or transplacental passage of maternal blocking antibodies. Early diagnosis and adequate treatment of mothers with GD is imperative to prevent the deleterious consequences of thyroid impairment during the neonatal period. Infants of maternal GD should be monitored for both hyperthyroidism and hypothyroidism.

PE-08

CASE SERIES OF NEONATAL DIABETES WITH KCNJ11 MUTATION_ TRANSFER FROM INSULIN TO SULPHONYLUREA

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INTRODUCTION

Permanent neonatal diabetes, presenting before 6 months old, signifies a monogenic cause. Mostly, it involves mutation of KCNJ11 gene that encodes the Kir6.2 subunit of the ATP-sensitive potassium channel (KATP). The landmark findings by Gloyn et al (NEJM 2004) on oral sulphonylurea (SU) binding to KATP and closing it by a non-ATP dependent route has markedly changed the landscape of management.

METHODOLOGY

Cross-sectional review of medical records.

RESULTS

3 patients (A, B, C) included. (A) presented at day 14, while (B&C) both at 2-month-old. (A) had hyperglycemia without ketosis while (B&C) had severe DKA. (B) also had seizures with delayed motor development (possibly intermediate DEND). All were initiated with subcutaneous insulin at diagnosis. Genetic tests were performed at 8-year-old, 1-year-old, and 5-month-old, respectively. Both (B&C) were similarly heterozygous for a pathogenic KCNJ11 missense variant with p.(Arg201Cys). Transfer to SU was performed based on the published protocol by Prof Andrew Hattersley from the University of Exeter. Time to SU varied with the slowest transfer at 8-year-9-month-old and quickest at 1-year-7-month-old. All transfers were successful with insulin weaned off. Noticeable improvement of HbA1c and C-peptide were demonstrated after 12 weeks. HbA1c decreased from 8% to 5.7%, 8.9% to 6.2%, and 9.6% to 5.8%; C-peptide improved from undetected (<33 pmol/L) to 185 pmol/L, 861 pmol/L, 73 pmol/L, respectively. (B) showed minimal response initially to gliclazide but an excellent response to glibenclamide. Initial glibenclamide dose varied from 0.8 mg/kg/day to 1.6 mg/kg/day. No hypoglycemia or GI complications. (A) needed to restart insulin at 13-year-8-month-old, 5 years after the transfer. (A) was the last to transfer to SU and required a higher initial dose.

CONCLUSION

Neonatal diabetes warrants rapid and focused genetic analysis to identify the genotypes with modifiable outcomes. Early genetic confirmation facilitates the transfer to oral SU for better glycaemic and neurodevelopmental outcomes and potentially improves the durability of the treatment.

PE-09

NEWLY DIAGNOSED T1DM PATIENTS - A DESCRIPTIVE STUDY IN A CHILDREN'S HOSPITAL

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INTRODUCTION

Type-1-diabetes mellitus (T1DM) is the most commonly diagnosed type of DM in children and adolescents. Typically, the presentation of T1DM is either as classic new onset DM, silent DM, or diabetic ketoacidosis (DKA). We aim to describe the epidemiological profile, clinical presentation, and factors related to delayed diagnosis in our patients.

METHODOLOGY

We retrospectively evaluated all newly diagnosed T1DM patients that presented to our centre from January 2015 till May 2021. Diagnosis of T1DM is based on clinical phenotype, with or without antibody confirmation.

RESULTS

A total of 22 patients were identified. From 2015 to 2020, with an average of 2.3 cases per year. In the first 5 months of 2021 alone, there is a total of 8 new cases. Majority of the patients fell in the 5-9 years age group and were of Kadazan-Dusun ethnicity. One patient was noted to be obese at time of diagnosis. 77.3 % of all the cases presented with DKA and of this, 64.7% were severe DKA. Median length of hospital stay was 7 days for children with DKA versus 3 days for those without DKA. 76% of children with DKA required ICU care. 50% of all patients had the classical triad of symptoms of polyuria, polydipsia and weight loss. Other symptoms included visual blurring, penile discharge, dysuria and light-headedness. One patient had concurrent nephritis and one had COVID-19 co-infection. One death was reported with case fatality ratio at 4.5%. Four patients were misdiagnosed at presentation. Among the cited reasons for delayed diagnosis was failure to recognise symptoms of T1DM.

CONCLUSION

Majority of the newly diagnosed T1DM presented with DKA with high proportion of severe disease. More health awareness is needed in our community.

PE-10

THE IMPACT OF PRE-RAMADHAN WEBINAR ON FASTING IN ADOLESCENTS WITH TYPE 1 DIABETES MELLITUS – A PILOT STUDY

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INTRODUCTION

Tele-education is the new form of education delivery during the COVID-19 pandemic. Patients with Type 1 diabetes are required to attend pre-Ramadhan fasting education sessions in accordance with the latest ISPAD guideline. This study aims to assess the outcome of a structured pre-Ramadhan webinar on diabetes self-care and knowledge during fasting in Type 1 diabetes adolescents.

METHODOLOGY

A pilot study on adolescents with T1DM attending University Malaya Medical Centre (UMMC) or Universiti Teknologi MARA (UiTM) clinics who wished to fast in Ramadhan, was conducted. Participants and parents were invited to attend the pre-Ramadhan online education session 1-4 weeks before Ramadhan. Teaching on Ramadhan Fasting (RF) regulations, the pre-requisites for RF, insulin injections and adjustment, self-monitoring blood glucose (SMBG) and the ideal Ramadhan diet were covered. The post-webinar survey was sent to all participants 3 weeks after Ramadhan.

RESULTS

Fifteen adolescents attended the teaching. Majority (80%) was 10-15 years old. Sixty percent were female. Eight parents (62%) responded to the post-webinar survey. Nine in ten patients/parents were unaware on the prior regulations of RF for T1DM. Despite this, 85% were encouraged to perform RF, and 77% have performed RF previously. During previous years, 82% had difficulties with BG stabilization, 55% had hypoglycemia and 9% had experienced diabetic ketoacidosis (DKA). For RF this year, several improvements were identified post-webinar: 69% had fewer complications (hypoglycaemia and DKA), 69% were more compliant with insulin injections, 85% were more confident with insulin adjustments and 38.5% made improvements with dietary modification during RF. SMBG (more than 3 times per day) improved from 81.8% to 84.6%.

CONCLUSION

This pilot study demonstrates that a pre-Ramadhan webinar during the Covid19 pandemic can improve knowledge and diabetes self-care amongst T1DM adolescents. Education via online platform is indeed a valuable alternative medium to reach out to fasting T1DM patients during Ramadhan.