# PAEDIATRIC

## PP-82

### Transient Congenital Hypothyroidism: Cut off Value for Diagnosis and Time to Normalization of Thyroid Function

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**Siti Hazlini AH,[1] Suhaimi H,[1] Najib Majdi Y[2]**
[1]*Department of Paediatric, Hospital Universiti Sains Malaysia*
[2]*Department of Biostatistics and Research Methodology, School of Medical Science, Universiti Sains Malaysia*

**INTRODUCTION**
Congenital hypothyroidism is one of the most commonly known cause of preventable mental retardation but detection at birth is difficult. As a continuum of this, screening programme was developed worldwide, which identified not only permanent hypothyroidism, but also group of disorders which was unidentified before due to unapparent clinical course namely transient congenital hypothyroidism (elevated thyroid stimulating hormone (TSH), decreased free thyroxine (FT4)) and transient congenital hyperthyrotropinaemia (elevated TSH, normal FT4). This study intended to look into cut off value for earlier discrimination between transient and permanent hypothyroidism, to determine median time for thyroid function to normalize upon cessation of treatment in transient group and its affecting factors.

**METHODOLOGY**
55 cases of congenital hypothyroidism were identified from retrospective record reviews. 37 cases were with permanent hypothyroidism and 18 cases were with transient hypothyroidism. The optimal cut off value of initial TSH and FT4 level were analyzed using receiver operating characteristics (ROC) curve analysis for both groups. Kaplan-Meier survival analysis was conducted to estimate median time for thyroid function to normalize within the transient hypothyroidism group. Both Simple and Multiple Cox Regression analysis were used to determine factors affecting the median time.

**RESULTS**
The cut off value for initial free T4 was 13.45 pmol/L with area under ROC curve of 70.5% (sensitivity 72.2%, specificity 64.7%). The median time obtained was 12 weeks and both the initial TSH and initial free T4 (p value <0.05) were the significant affecting factors identified.

**CONCLUSION**
The initial free T4 has a predictive value to differentiate between transient and permanent hypothyroid. It takes 12 weeks for thyroid function to normalize once treatment ceased and both initial TSH and initial free T4 affects the median time.

## PP-83

### Dyslipidaemia in Children with Type 1 Diabetes Mellitus (T1DM)

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**Yik Liang T,[1] Muhammad Yazid J,[2] Mazidah N,[2] Nurshadia S,[2] Azriyanti AZ[2]**
[1]*Newcastle University Medicine Malaysia, Johor, Malaysia*
[2]*Paediatric Endocrine and Diabetes unit, Department of Paediatrics, Faculty of Medicine, University Malaya, Kuala Lumpur, Malaysia*

**INTRODUCTION**
Children with T1DM are at risk of early microvascular and macrovascular complications. Poor glycaemic control and insulin resistance status in adolescents are known risk factors. This audit studies the prevalence of dyslipidemia in children with T1DM seen in UMMC.

**METHODOLOGY**
This is a retrospective data collection involving all children with T1DM under UMMC follow-up between 2016-2018. Children between 11-18 years old were included. Demographics on onset of diabetes, diabetes control and lipid profiles were analysed. Optimal HbA1c is <7.5% and dyslipidemia are defined if total cholesterol (TC)>5.2 mmol/L, triglycerides (TG)>1.7 mmol/L and high LDL level is >2.6 mmol/L which requires interventions on metabolic control and lifestyle. Statin should be commenced in children aged≥11 years if LDL is >3.4 mmol/L [ISPAD].

**RESULTS**
65 (33%male) children were eligible for the audit. Only 56 (86%) children had dyslipidemia screening. There were 28% Malay, 17% Chinese and 17% Indian children. The current mean age was 14.3±1.9 years old. 7.7% were underweight and 26.1% were overweight/obese. Mean age at diagnosis was 8.7±3.0 years old. Mean diabetes duration was 5.7±3.2 years. Mean HbA1c was 9.9±2.4% with 89% of them having sub-optimal control. Thirty-eight (68%) had dyslipidemia; 38% had abnormal TC levels, 23% had abnormal TG levels and 57% had abnormal LDL levels. 39% of children had LDL between 2.6-3.4 mmol/L and 18% had LDL>3.4 mmol/L. Only 2 were treated with statins. The odds of having dyslipidemia is highest in most poorly controlled T1DM (OR8.6 in HbA1c>11.1%, OR3.7 in 9-11%, OR1.5 if HbA1c 7.5-9%) and 2.31 in those who are overweight/obese. However, despite having good control (HbA1c<7.5%), 5.5% of T1DM children have dyslipidemia.

### CONCLUSION

Children with T1DM are at risk of early onset dyslipidemia. Poor diabetes control and obesity are contributing factors. Current practice is to optimise diabetic control instead of using statins as initial treatment. Long term outcome on early statin use may influence the current practice.

## PP-84

## Eating Disorder in Adolescents with T1DM: A Concern on the Rise

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**Rokiah I,[1] Pamela LMS,[2] Siti Nur Adila S,[2] Nur Iryani Amirah J,[2] Sameeha MJ,[3] Muhammad Yazid J,[4] Nik Shanita S,[2] Azriyanti AZ[4]**

*[1]Department of Dietetics, University Malaya Medical Centre, Kuala Lumpur, Malaysia*

*[2]Dietetics Programme, Centre for Community Health, Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia*

*[3]Nutrition Programme, Centre for Community Health, Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia*

*[4]Department of Paediatric, University of Malaya, Kuala Lumpur, Malaysia*

### INTRODUCTION

Type 1 Diabetes (T1DM) is a chronic illness which affects the young. Managing diabetes is all about balancing the need for insulin with food. Adolescents with T1DM are at risk of having more eating disorder as compared to general population. This study aims to learn about the nutritional status and risk of eating disorder in adolescent with T1DM.

### METHODOLOGY

Adolescents with T1DM were invited to participate in the study. The study was done over eight weeks, during diabetes clinic visits at University Malaya Medical Centre. Nutritional status will be determined by anthropometric measurements which includes body mass index and body fat percentage (PBF). BMI<-2SDS is considered underweight and>85Th centile for age is overweight. Eating disorder was identified using Diabetes Eating Problem Survey-Revised (DEPS-R) questionnaire. Data on diabetes control (HBA1c) and other histories were obtained from medical records.

### RESULTS

There were 43 respondents, 61% were boys. Eighteen percent were Malays, 16% Indians and 9% Chinese. There were 13 adolescents between 10-12 years-old, 19 (12-15 years-old) and 11 (16-18 years old). Mean duration of having T1DM were 4.9±3.5 years and their mean HbA1c at study period were 10.3±2.7%. A total of 16% were found to be underweight and 14% were overweight and obese. There were more cases of underweight (27%) in adolescents between 16-18 years old. Boys were found to have higher PBF than girls. There were 35% adolescents who are at risk of eating disorder. Between BMI and Hba1c, BMI was found to have higher correlation to have eating disorder p=0.07 rs=0.3.

### CONCLUSION

Adolescents with T1DM were found to have a high risk of having eating disorder. Screening should start early and formal assessment would assist with early diagnosis. Early referral to child psychologist may be necessary.

## PP-85

## Diabetes Nephropathy among Adolescents with Type I Diabetes Mellitus

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**Muhammad Zaki AR,[1] Mazidah N,[1] Noor Shafina MN,[1] Muhammad Yazid J,[2] Azriyanti AZ[2]**

*[1]Department of Paediatrics, Faculty of Medicine, University Teknologi MARA (UiTM), Sg Buloh, Malaysia.*

*[2]Department of Paediatrics, Faculty of Medicine, University Malaya Medical Centre, Kuala Lumpur, Malaysia.*

### INTRODUCTION

Diabetic nephropathy (DN) is a common cause of mortality and morbidity of young T1DM adult patients. This study is to assess the prevalence of DN in T1DM among adolescents, and its association with duration of diabetes and control.

### METHODOLOGY

This is a multicenter retrospective study in paediatric department University Malaya Medical Centre (UMMC) and paediatric department University Teknologi MARA (UiTM), involving children between 10 to 20 years old. Data collection on patient background, control and treatment were obtained. Patients are considered to have DN if the urine albumin/creatinine ratio is >3.5 mg/mmol (girls) >2.5 mg/mmol (boys) in 2 out of 3 samples within 6 months.

### RESULTS

109 patients (40% boys) were eligible in the study. Mean age is 15.1±2.7 years old (10.6-20.3). The mean age of diagnosis is 8.8±3.5 years old. The prevalence of DN is 10.1%. Amongst patients with DN, the mean duration of diabetes is 5.9±2.5 years, and the mean HbA1C at year of DN diagnosis was 11.3±2.3%. Only one patient was diagnosed with DN <11 years old. This is due to initial poorly controlled DM. One patient had hypertension at the point of DN diagnosis. The odds of having DN is higher with poorly controlled T1DM (OR 6.9 if HbA1c>9% vs OR 0.76 if HbA1c 7.5-8.9%).