G434(P) FAMILIAL DIABETES MELLITUS: 2 SIDES OF A COINP Vasista, P Sundaram. *Paediatrics, Leicester Royal Infirmary, UHL NHS Trust, Leicester, UK*

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Aim To understand the difference in presentation of an inherited condition depending on the mode of inheritance.

Case Report *Case A:* 11 years old girl with history of tiredness, normal BMI, had high blood glucose BG (7.1 mmol/L) and HbA1c (45 mmol/mol). There was family history of Type 2 Diabetes mellitus (DM) in mother, diagnosed at age of 23 years.

Oral glucose tolerance test:

	BG (mmol/L)
0 min	6.2
60 min	9.8
120 min	8.0

HbA1c	45 mmol/mol
C-peptide	616 (298 – 2350 pmol/l)
Insulin	10.3 (4.4– 26 mIU/l)
Insulin antibodies	< 2 mg/L
Islet cell antibody	Negative
Anti GAD antibody	< 5 IU/ml

Blood Glucose (BG)	19 mmol/l
Insulin	<2 mIU/L (4.4 –26)
C-peptide	42 pmol/L (298–2350)
IA2 antibody	<10 IU/ml (0–10)
Anti GAD antibody	<5 U/ml (0–10)
Islet cell antibody	Negative
Thyroid function test	Normal

Genetic test confirmed MODY – *Heterozygous* GCK mutation. She did not require any treatment and had stable HbA1c on further regular monitoring. *Case B* - 10 days old term female baby, weighing 1.88 Kg (<0.4th centiles), admitted in hospital for jaundice, was found to have glycosuria and hyperglycaemia (BG =24 mmol/L). Her mother had gestational Diabetes and father had type 2 DM.

Genetic test confirmed MODY – *Homozygous* GCK mutation. She was managed with IV fluids and intravenous insulin infusion and then started on sensor augmented insulin pump. **Conclusion** MODY GCK mutation accounts for ~15% of the familial DM. Glucokinase acts as 'glucose sensor' for secretion of insulin in pancreas. Mutation of GCK gene results in 'resetting' of the glucose sensors, causing delayed secretion of insulin.

The manifestation of symptoms varies with type of mutation in GCK-MODY. The commoner *heterozygous* mutation is asymptomatic with stable mild hyperglycaemia and no treatment is required. The rarer *homozygous* mutation presents as permanent neonatal DM requiring life-long insulin therapy.

G435(P) HYPERTENSION IN CHILDREN WITH DIABETES

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Aim To Monitor the persistence of abnormal blood pressure recordings in young age diabetes patients.

Method The data was collected from a Paediatric diabetes unit of a DGH for national Paediatric diabetes audit for the year 2017 – 18. There were 106 children in the age group of 12 – 18 years. We classified any blood pressure reading above the 95th centile for the age, sex and height as hypertension.

Results There were 27(25.4%) patients out of 106 who had at least one blood pressure reading above the 95th centile. 16 were male and 11 females (table 1, 2 and 3).

Abstract G435(P) Table 1 Ethnic origin

Ethnic origin	Numbers
White British	15
Asian Pakistani	4
Black African	2
Asian Bangladeshi	1
Asian Other	1
Any white	1
Mixed white and black African	1
Mixed white and black Caribbean	1
Not tested	1

Abstract G435(P) Table 2 BMI

Category	BMI centiles	Numbers
Obese	>98th	5
Overweight	91–98	5
Normal weight	2–91	15
Underweight	<2	2

Abstract G435(P) Table 3 Blood pressure readings

Number BP reading	No. of patients	4 abnormal readings	3 abnormal readings	2 abnormal readings	1 abnormal reading
4	7	0	1	0	6
3	8	-	1	0	7
2	7	-	-	2	5
1	5	-	-	-	5

23 out of 27 patients (85%) had only one abnormally high BP, 2 (7.4%) had 2 readings and 2 (7.4%) had 3 abnormally high BP.

Conclusion Majority of children with hypertension had only one abnormal reading, only with 15% of the patients a high blood pressure was recorded more than once.