

Estimation of GCK-MODY prevalence by phenotype among Emiratis at a single centre in United Arab Emirates

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Introduction

GCK-MODY is a single gene mutation resulting in mild hyperglycaemia and characteristic Oral Glucose Tolerance Test (OGTT) profile. 2% of cases of diabetes are potentially due to MODY of which GCK is the second most common. There are no available studies of GCK-MODY prevalence in Arab populations.

Aims

We aimed to estimate the prevalence of GCK-MODY phenotype among Emiratis.

Methods

OGTT results performed at ICLDC, Abu Dhabi (n=1719) over ten-year period were reviewed. Individuals aged under 40 were included if results met the criteria of fasting glucose between 5.5 and 8.5mmol/L, a glucose increment ≤ 3 mmol/L at 120 minutes and HbA1c $\leq 7\%$ (53mmol/mol).

Results

72.6% (n=1248) of subjects were Emirati. 194 individuals met the criteria for consideration of GCK-MODY of whom 147 were Emirati (11.7%). Females (n=98) outnumbered males (n=49) and 73.4% (n=108) had a history of diabetes in a first degree relative. 6 had been diagnosed with type 2 diabetes, one with gestational diabetes and one with impaired fasting glucose. Compared to healthy Emiratis, fewer of those identified as potentially having GCK-MODY were overweight (33.7% vs 19.7%) however rates of obesity were higher (33.8% and 52.3% respectively). 19 individuals (12.9%) had normal BMI.

Conclusion

In a population of Emiratis at risk of Diabetes, the number of individuals presenting with an OGTT result consistent with GCK-MODY is higher than other studies. BMI is unlikely to be of clinical use given the rates of obesity in the population. This data supports the development of genetic studies to verify these results in our population.