using STRING database showed that the markers are significantly involved in T2DM and insulin resistance pathway; false discovery rate 1.87e-09 and 5.39e-09 respectively.

CONCLUSION

Four markers overlapped and interconnected between insulin resistance and T2DM pathways demonstrate the significance and robust outcome of the methodology. CCS of these markers can be used to stratify risk among healthy and pre-diabetes people. The developed blood-based testing not only provides unprecedented early solutions for management, diagnosis and treatment of T2DM but also promising clues on the mechanism of T2DM progression. A further validation with cohort collected is to follow.

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Islet Cell Autoantibody Profile in a Malaysian Type-2 Diabetes Mellitus Population

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INTRODUCTION

Latent autoimmune diabetes in adults (LADA) accounts for 2-12% of all adult diabetes, where progressive islet cell failure leads to insulin deficiency. Insulin sensitivity is a major factor in the development of Type-2 diabetes mellitus (T2DM). This study aims to investigate islet cell autoantibody profile in a multi-ethnic T2DM cohort.

METHODOLOGY

ELISA assays of insulin antibodies, glutamic acid decarboxylase 65 (GADA65) and tyrosine phosphatase-related islet antigen 2 (IA2) (EUROIMMUN AG, Germany) were performed for 88 subjects (50 diabetes, 31 pre-diabetes and 7 healthy). Assay was performed using subjects' sera in duplicates and absorbance was read at wavelength 405 nm using a microplate reader. Titer positivity for anti-GAD65 and anti-IA2 were defined at ≥10 IU/ml. Subsequently, subjects were categorised into good control (HbA1C <5.6%, n=8) and bad control (≥5.6%, n=80). Statistical analysis of demographic factors was performed using chi-square test and ANOVA.

RESULTS

Eleven anti-GAD65 positives subjects were detected, and 1 subject presented positivity for both anti-GAD65 and anti-IA2. Among them, none are healthy subjects, 2 are pre-diabetic and 9 are diabetic, reflecting a gradual increment of β-cells failure from pre-diabetic to diabetic. A higher anti-GAD65-positives was also observed in Chinese (n=6/11, 54.5%) and in females (n=8/11, 72.7%). Comparing to anti-GAD65-negatives, anti-GAD65-positive subjects tend to be older (mean=57.6 years,±10.2), with higher HbA1c (mean=7.7%,±2.1), and higher BMI (5 overweight, 45.5% and 3 obese, 27.3%).

CONCLUSION

Anti-GAD65-positives detected is higher (18%) compared to studies in Singapore (7%) and China (5.9%). No statistical significance was observed when comparing autoantibody profiles with demography factors probably due to the small sample size. However, the higher prevalence of β-cell failure in T2DM diagnosed individuals in Malaysia indicates the necessity to study with a larger cohort.