



RESULTS

Out of 252 subjects, 52 % (n = 131) of the subjects had T2D. A positive correlation was observed between HIF-1 α and HbA1c ($\rho = 0.295$, $P < 0.001$). Individuals with T2D had markedly higher median HIF1 α levels compared with their non-T2D counterparts [207.1 (IQR:180.4–246.1) vs 155.1 (IQR:132.0–189.6) pg/ml; $P < 0.001$]. The association between natural log-transformed circulating HIF1 α and T2D (outcome) remained significant even after adjusting for age, gender, body mass index and HbA1c (risk ratio: 2.63, 95% CI: 1.85–3.74, $P < 0.001$).

CONCLUSION

To our knowledge, this is the first study to demonstrate an association between circulating HIF1 α and T2D in people with severe obesity. Our data suggest that hyperglycemia may result in the accumulation of HIF1 α protein, which may contribute to the development of T2D-associated complications. Hence, inhibition of HIF1 α expression may exert beneficial effects on T2D and its complications.

PP-D-05

THE EFFECTS OF ADVERSE CHILDHOOD EXPERIENCES (ACE) ON THE DEVELOPMENT OF DIABETES MELLITUS (DM) AND PRIMARY HYPOTHYROIDISM IN ADULTS

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OBJECTIVES

Globally, diabetes mellitus (DM) and hypothyroidism are the leading endocrine disorders. The etiology of DM and hypothyroidism is complex and the influence of toxic stress on their development is yet to be explored. Few studies report high scores of adverse childhood experiences (ACE) in DM patients. Our study aims to investigate the effect of ACE on DM, insulin resistance (IR) and primary hypothyroidism in a local population and to understand its effects on the risk of developing these diseases in adulthood.

METHODOLOGY

A cross-sectional web-based study was conducted. We investigated 123 adults over 21 years old who were clinically diagnosed with DM, IR and primary hypothyroidism in Georgia using an ACE (scores ranging from 0–4+) survey and the CDC guidelines for risk factors for ACE.

RESULTS

Analysis showed that 42 participants had only one of the three endocrine disorders: 27 with DM, 7 with IR and 8 with hypothyroidism. On the other hand, 81 patients had 2 out of 3 disorders: 27 had DM and hypothyroidism while 54 had hypothyroidism with IR. ACE score of 4+ was associated with increased odds of DM (OR = 2.51, 95% CI 1.34, 4.18) and hypothyroidism (OR = 1.34, 95% CI 0.71, 2.51). The ACE was not associated with IR (OR = 0.65, 95% CI 0.31, 1.34). However, in patients with both IR and hypothyroidism, a high ACE score was observed (OR = 1.78, 95% CI 0.51, 6.28). Participants with concomitant DM and hypothyroidism had the strongest association with ACE (OR = 3.26, 95% CI 1.14, 9.29).

CONCLUSION

Results of the study suggest that a high ACE score increases the risk for DM, hypothyroidism and IR with hypothyroidism. This opens new avenues to develop preventive and management strategies for these diseases.

PP-D-06

MEDITERRANEAN DIET FOR DIABETES MELLITUS TYPE 2 PREVENTION, A LESSON FROM 751,161 SUBJECT: A SYSTEMATIC REVIEW AND META-ANALYSIS

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OBJECTIVES

An unhealthy diet including excessive caloric intake and physical inactivity are strongly associated with future risk for type 2 diabetes (T2D). A meta-analysis by Esposito et al. showed that adoption of a healthy diet will decrease the risk of diabetes by 20%. An example of diet modification is the Mediterranean diet. Hence, we would like to determine the effect of the Mediterranean diet on the prevention of T2D.



METHODOLOGY

Electronic searches from several electronic databases for cohort and randomized controlled trial (RCT) was carried out in May 2022 with the following keywords: "Diabetes Mellitus Type 2" and "Mediterranean diet" and "Prevention" and "Incidence." Pooled effect was calculated using the statistical software Stata version 13. Primary analyses included the incidence of T2D and was limited to prospective studies in the healthy and/or high-risk population.

RESULTS

From 546 studies published from 2007 to 2020, 4 RCTs and 18 cohort studies (751,161 subjects) were included in our meta-analysis. Subgroup analysis was performed based on health status and sex. From pooled analysis, Mediterranean diet will decrease the risk for T2D by 17.6% (RR 0.824 (95%CI 0.803-0.845, I²: 70.05, P<0.0001). This effect was greater in the high-risk population (27%) and females (9.98%). The Egger regression test showed no evidence of substantial publication bias (P=0.12).

CONCLUSION

The present study has shown the benefits of adopting the Mediterranean diet among the healthy and high-risk population. Diet modification is essential, especially in those at risk for T2D and CVD.

PP-D-07

THE DIAGNOSTIC VALUE OF FIBROSIS-4 SCORE (FIB-4) IN DETECTING NON-ALCOHOLIC FATTY LIVER DISEASE AMONG ADULTS WITH TYPE 2 DIABETES MELLITUS

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OBJECTIVES

This study aimed to determine the diagnostic value of Fibrosis 4 (FIB-4) index in detecting non-alcoholic fatty liver disease (NAFLD) among adult Type 2 Diabetes Mellitus (T2DM) patients.

METHODOLOGY

A single center, analytical cross-sectional study was conducted among adult T2DM patients with and without NAFLD at St. Luke's Medical Center, Quezon City. Medical history was obtained by reviewing charts of eligible patients. Liver ultrasound was used as the reference standard for the diagnosis of NAFLD. The FIB-4 index was calculated with the formula: age (years) × AST (U/L)/(platelets (10⁹/L) × ALT (U/L)^{1/2}.

RESULTS

A total of 305 patients with T2DM were included in the study. The prevalence of NAFLD based on ultrasound among diabetic patients is 76.07%. The median age, AST, and ALT were significantly higher in patients with NAFLD than those without. Platelet count was significantly lower in patients with NAFLD than those without. The proportion of patients with low platelet count, high AST and high ALT were significantly higher in patients with NAFLD than those without. In this study, the FIB-4 index cut-off score for screening of NAFLD is ≥ 0.76 , with an accuracy of 66.23%, sensitivity of 75%, specificity of 38.3%, PPV of 79.46% and NPV of 32.56% in detecting fatty liver.

CONCLUSION

A FIB-4 index value of ≥ 0.76 has acceptable sensitivity for screening NAFLD even in the absence of fibrosis among patients with T2DM. However, due to its low specificity, additional tests to establish a diagnosis of NAFLD may be required.