

OA-GE-07

THE DIFFERENCES IN INTERLEUKIN-6 LEVELS AND MEAN PLATELET VOLUME BETWEEN NON-ALCOHOLIC FATTY LIVER DISEASE AND NON NAFLD GROUPS IN YOUNG SUBJECTS WITH CENTRAL OBESITY

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INTRODUCTION

Obesity is one of the major risk factors of metabolic diseases such as NAFLD. Proinflammatory cytokines played specific role in the incidence of NAFLD. IL-6 influences megakaryocyte maturation and platelet size, which is measured as mean platelet volume (MPV). The purpose was to determine the difference in IL-6 and MPV levels between NAFLD and non NAFLD groups in central obesity.

METHODOLOGY

This research was a comparative analytic with cross sectional study conducted in May 2018 - July 2018. Samples were taken sequentially based on inclusion criteria. Serum IL-6 was examined by ELISA, reagent kit R&D System Inc. MPV was examined by Sysmex XN-2000-1-fIR. NAFLD was diagnosed by abdominal ultrasound.

RESULTS

This study included 40 samples, with mean age 30±5 years old, including 28 people (70%) who experienced NAFLD. Subjects had mean waist circumference of 99.08±8.42 cm and mean BMI of 28.35±3.59 cm. The difference in mean IL-6 levels between NAFLD and non NAFLD groups was 2.27±1.08 pg/mL vs 1.21±0.25 pg/mL (p = 0.002). While the mean difference in MPV in the NAFLD and non-NAFLD groups was 10.19±0.82 fL vs 9.39±0.66 fL (p = 0.005). IL-6 plays an important role in the acute inflammatory response, include inducing liver to synthesize other inflammatory mediators. IL-6 affects the maturation of megakaryocytes, causing larger platelets to be released into the blood circulation.

CONCLUSION

There was a significant difference between IL-6 and MPV levels in NAFLD group compared with non NAFLD group in central obesity.

KEY WORDS

central obesity, NAFLD, IL-6, MPV

OA-GE-08

ANGIOPOIETIN-LIKE GROWTH FACTOR CONTROLS APPETITE VIA LEPTIN SIGNALING

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INTRODUCTION

Hypothalamic regulation of appetite governs whole-body energy balance. Satiety is regulated by endocrine factors, including leptin, and impaired leptin induction causes obesity. Angiopoietin-like growth factor (AGF) promotes energy expenditure in the periphery, and systemic reconstitution of AGF antagonizes obesity. However, whether hypothalamic AGF plays a role in controlling food intake remains unknown.

METHODOLOGY

Immunofluorescence staining was used to identify the intensity of AGF and leptin signaling in the hypothalamus. In addition, to verify the function of AGF in the hypothalamus, we used stereotaxic intracerebroventricular injection with recombinant AGF.

RESULTS

We demonstrated that AGF is expressed in proopiomelanocortin (POMC)-positive neurons located in the arcuate nucleus (ARC) of the hypothalamus. AGF expression was stimulated by leptin-induced STAT3 phosphorylation. Notably, intracerebroventricular injection of AGF significantly reduced food intake by stimulating phosphorylation of CREB in the POMC and increasing α -melanocyte-stimulating hormone (α -MSH) content in the hypothalamus. We also found that hypothalamic injection of AGF significantly suppressed food intake and decreased body weight in high-fat-diet-induced obese mice, which exhibit leptin insensitivity.

CONCLUSION

Collectively, our findings demonstrate that hypothalamic AGF provokes the anorectic melanocortin pathway and mediates leptin signaling to prevent obesity.

KEY WORDS

Obesity, AGF, Hypothalamus, Leptin signaling

OA-GE-09

DETERMINANTS OF INSULIN RESISTANCE AMONG PEOPLE LIVING IN A RURAL AREA OF INDONESIA

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INTRODUCTION

Worldwide prevalence of obesity has increased rapidly, of which the main driver is the rising of body weight among people living in the rural area. While obesity is one of the main risk factors for the development of type 2 diabetes (T2DM), in a rural area, other environmental factors might also play a role. This study aims to assess the determinants of insulin resistance (IR), the main pathogenesis of T2DM, among people living in a rural area of Indonesia.

METHODOLOGY

We analyzed the baseline data of the Sugarspin study (n=1669) which was conducted in Nangapanda, Flores Island, Indonesia. The influence of each risk factors to HOMA-IR, was analyzed using linear regression analysis.

RESULTS

The prevalence of IR was 27.8% and 28.2% for men and women respectively. Increasing BMI and waist circumference were associated with increasing IR. Increasing age was also associated with increasing IR, however, in men after the age of 55, further increment in age was not associated with increasing IR. Progressive increase in BMI was observed until the age of 40, which then plateau until the age of 55, and then decline afterward. Interestingly, helminth infection was independently associated with a lower IR.

CONCLUSION

In a rural area, the main determinant of IR was similar to the one we observed in an urban area, which is obesity. However, the more prevalent infectious disease in a rural area might also directly or indirectly influence IR by its impact on obesity or other factors which need to be elucidated further.

KEY WORDS

insulin resistance, determinants, Indonesia, obesity, environments, rural

OA-GE-10

ASSOCIATION OF BODY MASS INDEX AND ALL CAUSE MORTALITY IN A TERTIARY REGIONAL HOSPITAL

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INTRODUCTION

This study is conducted to provide further clinical evidence to determine whether there is a significant association between body mass index and all-cause mortality risk. At present, there are no existing studies done in the Philippines regarding exploring BMI as risk factor for mortality among patients with existing illnesses.

METHODOLOGY

This prospective cohort study was conducted from September 2016 until September 2017. Analysis of BMI and mortality was done and logistic regression was performed to determine confounding variables.