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Correlation between Central Obesity with Screening Status of Proteinuria among Obese Adolescents in Denpasar City, Bali Province, Indonesia

Muhammad Faisal Putro Utomo¹, Yosua Hendrata Liman Setiawan¹, Inge Nandya Hertapanndika¹, Jessica Christy¹, Ni Made Dwi Purnami²

¹ Medical Student, School of Medicine, Udayana University

² Department of Pediatric, Sanglah General Hospital/School of Medicine, Udayana University

Background: Obesity in adolescents is a great concern of public health issue. It has been known increase the risk of proteinuria. Elevation of proteinuria level increased the risk of progressive renal and cardiovascular disease. There are few studies that provide evidence of the main factors associated with proteinuria status. This study was aimed to explore the correlation between Central Obesity (CO) and proteinuria screening status among obese adolescents in Denpasar District, Bali Province.

Methods: A cross-sectional study involves 163 obese adolescents (aged 12-14, BMI percentile $\geq P95$) was conducted. Sample taken from 10 private Junior High School and selected by cluster random sampling. Demographic characteristic data (gender, age, family history), the anthropometric data (body weight, height, BMI, BMI Percentile, waist circumference, and family history) and proteinuria screening status were assessed. Data were analyzed using univariate and bivariate analysis (chi-square test with cramer's v).

Results: The prevalence of CO and proteinuria among obese adolescents is 58.9% and 10.4%, respectively. The mean of waist circumference among obese adolescents is 91.5 centimetre. There is a significant difference of proteinuria among obese adolescents based on CO status (4.7% vs 17%; $p < 0.05$). This study revealed a weak correlation between CO and proteinuria screening status ($r = 0.163$, $p = 0.038$).

Conclusion: The correlation between CO and proteinuria screening status were weak in statistic. Proteinuria not only associated with CO, some antropometric status and clinical examination may correlated. Further studies are needed to describe some specific factors associated with proteinuria among adolescent and establish the prevention of metabolic syndrome in early stage.

Rebound weight gain worsen the experimental non-alcoholic fatty liver disease in rat model

Noha M. Abogresha, Mona A. Hussein, Ranya Hassan and Dalia A. Tamany

Suez Canal University, Egypt

Background: The prevalence of obesity is increasing worldwide and recurrent attempts for losing weight are very common. Diet cycling predisposes to health hazards including non-alcoholic fatty liver disease (NAFLD). This study aimed at evaluating the effect of diet cycling on the course of NAFLD.

Materials and methods: Male albino Sprague-Dawley rats were used in the study, 24 rats were kept on standard pellet animal diet to serve as control group and 24 rats were fed high fat diet (HFD) for sixteen weeks. Cycling diet group were fed HFD for eight weeks to induce NAFLD, and then shifted to normal caloric diet for four weeks, and then rebound weight gain is allowed by subjecting rats to another four weeks for HFD. Every time interval 8 rats were sacrificed and evaluated for body mass index, liver index, lipid profile, liver enzymes, HOMA-IR index, free fatty acids, TNF- α , IL-6, TGF- β . Oxidative stress enzymes were also measured. Liver histopathology and α -SMA immunoreactivity were evaluated. Results Cycling diet group showed significant increase in inflammatory markers most notably TNF- α with concomitant significant decrease in glutathione reductase levels. Significant increase in BMI, Liver index and other parameters was obvious. More fatty infiltration was noted in cycling group with more inflammatory infiltration.

Conclusion: Cycling diet had a negative influence on NAFLD and interfered with normal liver function. Cycling diet caused more fatty infiltration and more inflammation than the continuous HFD. Continuous HFD and cycling diet shared the same fibrosis stage. These results suggest that rebound weight gain affect the course of NAFLD negatively.

hunyajana_hazem@yahoo.com