

SAMPLE OF ABSTRACT:

Prevalence of insulin resistance and risk of metabolic syndrome among young adolescents in Kuala Lumpur

Bee Suan Wee ¹, Awang Mahmud Bulgiba ², Mohd Noor Ismail ³, Bee Koon Poh ⁴

¹*Faculty of Medicine and Health Sciences, Universiti Sultan Zainal Abidin, Kuala Terengganu, Malaysia*

²*Julius Centre University of Malaya, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia*

³*School of Hospitality, Tourism and Culinary Arts, Taylor's University, Subang Jaya, Malaysia*

⁴*Centre for Community Health Studies, Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia*

Introduction: Insulin resistance (IR), a consequence of central obesity, has been proposed to be the metabolic mediator of metabolic dysfunction, such as hyperlipidemia and impaired glucose, which could progress to cardiovascular diseases and type II diabetes.

Objective: To evaluate the prevalence of insulin resistance and the effects of dysregulated glucose homeostasis with metabolic component among young adolescents.

Methodology: Subjects comprised 207 boys and 201 girls aged 9-14 years in Kuala Lumpur. Anthropometric measurements included weight, height, waist circumferences (WC), skinfolds at five sites; body composition was assessed with bioelectrical impedance technique. WHO 2007 BMI-for-age growth reference was used to categorise overweight/obese (O/O) and non-overweight/obese (non-O/O) groups. Blood pressure (BP) was taken, fasting blood glucose (FBG), triglycerides (TG), high-density lipoprotein, low-density lipoprotein, total cholesterol (TC) and insulin were determined in overnight fasting sample. International Diabetes Federation 2007 criteria for children and adolescents were used to identify metabolic syndrome (MS) risk while the homeostasis model assessment method was employed to calculate insulin sensitivity.

Results: Girls had significantly higher TC and skinfolds ($p < 0.05$) compared to boys. MS was found in 2.5% of adolescents, with 7.9% in O/O group. Prevalence of IR was 14.5%, with 39.7% in O/O group. Adolescents with larger WC [OR:19.3 (95%CI: 9.7, 38.5)], high FBG [OR:8.0 (95%CI: 2.2, 29.2)] and high TG [OR:4.6 (95%CI: 1.2, 17.2)] were found to have a higher risk of developing IR compared to adolescents who did not have poor biochemical profiles.

Conclusion: We conclude that IR was strongly related to metabolic risk and may be used as an indicator to assess children's risk for MS. Appropriate intervention programs should be planned to increase awareness and to promote healthy lifestyles in order to prevent central obesity among children and thus lower metabolic syndrome risk.

Keywords: children, insulin resistance, metabolic syndrome

Conflict of Interest: None Disclosed / Payment received from

Funding: No Funding / Research relating to this abstract was funded by