T3T4:P.138

Serum gamma glutamyl transferase and metabolic syndrome and its components in Chinese

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Introduction: To assess the associations between serum *gamma glutamyl transferase* (GGT) levels and the prevalence of metabolic syndrome and its components.

Methods: A total of 6091 people, aged 20 years and above, were recruited from a health examination center in a tertiary hospital in Taiwan from 2006 to 2008. 6073 subjects of these population had serum *gamma glutamyl transferase* data. Anthropometric index, questionnaire and laboratory assays were collected. Serum *GGT* levels were divided into two groups with cut off value of 50 mg/dL. Metabolic syndrome was defined by the AHA/NHLBI criteria. Multiple logistic regression analyses were used to estimate the odds ratios (ORs) and 95% confidence intervals for the prevalence of metabolic syndrome and its components in relation to *GGT* levels

Results: Serum *GGT* levels were correlated with fasting plasma glucose, triglycerides, systolic BP, diastolic BP, HDL-C, and waist circumference. After adjustment for age, sex, cigarette smoking, alcohol consumption, and physical activity, body mass index, serum glutamic pyruvic transaminase(SGPT), estimated glomerular filtration rate(eGFR), the ORs (95% CI) of having metabolic syndrome were 1.91(1.51–2.43) among subjects with high serum *GGT* levels compared to subjects with low serum GGT levels. After stratified by gender, serum GGT levels were significant associated with the prevalence of metabolic syndrome among men, but not among women. Besides, subjects with more factors of MeS had higher GGT levels, regardless of overall population, men, or women.

Conclusion: Elevated serum *GGT* level was independent associated with metabolic syndrome. The association, however, was not significant among women. Further study was necessary.

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T3T4:P.140

Validation and reliability of the Beliefs about the Causes of Obesity Questionnaire (BaCOBs)

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Introduction: It is necessary to investigate people's ideas about the causes of obesity because such ideas might be related to their eating habits and their attitudes towards obese individuals. The objective of this study was to design and analyze the structure and reliability of the Beliefs about the Causes of Obesity Questionnaire (BaCOBs).

Method: 497 high school students (249 women and 248 men) from Mexico City, with ages ranging between 15–22 years old (M = 16.82; SD = 1.342) took part in this study.

Results: Inicial results (KMO = .826; Bartlett's Test of Sphericity: $\chi 2$ = 2870.868; df = 300; p < .000) suggested the use of factorial analysis. A Principal Components Analysis and Varimax rotation revealed a five-factor structure that explains the 54.74% of the total variance. In the end, the BaCObs questionnaire was composed of 19 items (out of the original 34) and organized as follows: F1 *eating and exercising habits* (α = .672); F2 *will power* (α = .798); F3 *genetic factors* (α = .667); F4 *environmental factors* (α = .630) and F5 *family upbringing* (α = .663).

Conclusions: The results show that the BaCObs questionnaire is an adequate tool for the evaluation of individuals' ideas about the causes of obesity.

T3T4:P.141

Abdominal bioimpedance device is a useful to detect fasting blood glucose impairment in middle-aged men

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Introduction: Visceral abdominal adipose tissue (VAT) has been strongly associated with metabolic syndrome (MS) markers as fasting glycaemia. VAT measurement is a time-consuming and expensive and as consequence impractical for clinical and field settings. Recently, a new portable bioelectrical impedance device for abdominal region (Viscan®) has been developed, which estimates total abdominal fat (TAF) and VAT. However, there is a lack of cut-off values, which allow us to use Viscan® results as diagnostic tool. It was our aim to find cut-off values from Viscan® results for glycaemia impairment diagnostic.

Methods: 77 Caucasian males were enrolled [age: 37.0 ± 9.7 years; weight: 84.8 ± 13.2 kg; 174.4 ± 7.5 cm; 27.8 ± 3.98 kg/m^2]. Fasting plasma blood glucose (FBG) was measured using glucose hexokinase methodology. VAT and TAF were measured with BIA (Viscan®). Two groups were created, subjects with glucose impairment (fasting glucose >110 mg/dl) and without. ROC analyses were performed to determine cut-off points to have glucose impairment.

Results: Areas under curves of VAT and TAF were 0.72 ± 0.10 (95%CI: 0,612 to 0,824) and 0.79 ± 0.11 (95%CI: 0,685 to 0,879) respectively. ROC analysis showed cut-off points of 12 and 37.2% for VAT and TAF.

Conclusion: The main finding of this analysis was VAT and FAT showed good sensitivity and specificity to diagnose impairment on FBG in Caucasian middle-aged men, hence it suggests Viscan® as a useful tool to perform MS screening. Nevertheless, the cut-offs values obtained must be confirmed on larger samples.

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Objective measurement of life-style behaviours in free-living conditions: Development and validation of a posture-recognition algorithm from triaxial accelerometer data

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Introduction: Developing methods to monitor physical activity (PA) in free-living conditions is essential to study the relationships between PA -or the lack of PA- and health. Accelerometers enable continuous measurements of PA levels over extended periods of times. However, they often underestimate PA levels associated to cycling and fail to capture low-intensity activities, two of the main targets of interventions aiming at preventing or treating obesity. In order to overcome these limitations we developed a classification algorithm capable of identifying 8 types of PA from triaxial accelerometer data.

Methods: Data from 63 subjects (n=29 with BMI<25, n=17 with 25<BMI<30; n=17 BMI>30) wearing a triaxial accelerometer (MotionPOD™, Movea) while performing standardised activities in the laboratory were used to calibrate the algorithm. First, advanced signal processing was used to determine the sensor orientation. Then, a machine learning approach based on hidden Markov models was applied to identify 8 types of PA (lying down, slumped, sitting, standing, pacing,