学位論文内容の要旨

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学位論文題名

Visceral Obesity and Lipid Profiles in Chinese Adults with Normal and High Body Mass Index

（正常および高 BMI の中国人成人における内臓肥満および血中脂質分析結果）

Background: The world-wide prevalence of obesity has increased over the last five decades and is a major global health challenge given the associated and substantial elevated risk of disease. Obesity is diagnosed as a body mass index (BMI) of ≥30 kg/m2, while BMI may not be effective in identifying all individuals at elevated risk of cardio-metabolic diseases. There is evidence for the existence of a population sub-group who despite having normal BMI, display clusters of risk factors for metabolic and cardiovascular disease. Accumulating research indicates that visceral fat is an independent predictor of the components of metabolic syndrome, cardiovascular disease as well as fracture and osteoporosis, and visceral fat is an independent predictor of all-cause mortality in men and women. In the Chinese population, MSCT-derived visceral fat areas that are ≥ 142cm2 in men and > 115cm2 in women, are identified as cut-points for visceral obesity, and have been associated with a higher prevalence of risk factors for cardiovascular disease including hypertension, elevated low high density lipoprotein (HDL), total cholesterol (TC) and/or hypertriglyceridemia and hyperglycemia. However, the presence of visceral obesity and other early signs of cardiometabolic disease may go undetected because individuals with normal BMI would not usually be referred for cardiometabolic screening and treatment.

Aim: This study examined the prevalence of visceral obesity in Chinese adults across body mass index (BMI) groups, and associated lipid profile and demographic risk factors.

Methods: A total of 1,653 Chinese adults [age: 47.94 ± 11.16 years; normal BMI n = 609, high BMI n = 1,044] were recruited to the study. Abdominal quantitative CT imaging was performed to derive visceral fat (VF) at the L2-L3 level and visceral obesity was defined using established cut-off values. Fasting serum total cholesterol (TC), total glucose (TG), high density lipoprotein (HDL) and low-density lipoprotein (LDL) were measured.

Results: Visceral obesity was prevalent in 35% of men and 22% of women with normal BMI, and 86% of men and 78% of women with high BMI. In both sexes, participants with normal BMI and visceral obesity had higher levels of TC, TG and LDL, and lower HDL, compared to those with normal VF. Risk factors for visceral obesity in women with normal BMI were age $\geq$ 50 years and BMI $\geq$ 22.34 kg/m^2, and in men, BMI $\geq$ 22.48 kg/m^2. Conclusions: Visceral obesity was observed in the participants with normal BMI and was associated with an adverse lipid profile. The BMI cutoff points were lower than the normally accepted values.