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CORONARY RISK BIOMARKERS IN CENTRALLY OBESE PATIENTS WITH AND WITHOUT METABOLIC SYNDROME

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MSc

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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Metabolic syndrome (MS) represents a cluster of risk factors consisting of central obesity, atherogenic dyslipidaemia, hypertension and insulin resistant which increases coronary heart disease risk. Central obesity was postulated to be the underlying mechanism of metabolic syndrome. This present study aims to determine the relationship between coronary risk biomarkers, abdominal fat volume indices and carotid intima-media thickness (IMT) in drug naïve MS, central obesity without MS (COBXMS) and normal lean controls (NC), and between MS glycaemic subgroups. A cross sectional study involving 498 subjects (163 males and 355 females, age (mean±SD): 47.4±8.3 years) categorized into MS, COBXMS and NC. MS subjects were subdivided according to glycaemic status: diabetes mellitus (MDSM), impaired fasting glucose (MSIFG) and normoglycaemic (MSNG). Both MS and COBXMS had lower adiponectin and higher coronary risk biomarkers, abdominal fat volume indices and carotid IMT compared to NC; but these biomarkers were similar between MS and COBXMS. Similarly, MS glycaemic subgroups showed no differences ($p>0.05$) in these biomarkers. Waist circumference, blood pressure and subcutaneous fat volume were the independent variables affecting coronary risk biomarkers in all subjects after correcting for the various confounding factors. Among the MS glycaemic subgroups, waist circumference and blood pressure remained to be the independent variable. Central obesity without MS has reduced atheroprotective adipokine and enhanced prothrombotic and inflammation status comparable to MS, suggesting increased coronary risk in centrally obese subjects even in the absence of metabolic syndrome.

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TABLE OF CONTENTS