شبكة المعلومات الجامعية

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شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

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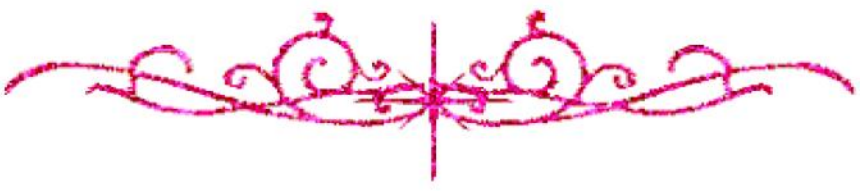

بالرسالة صفحات
لم ترد بالأصل

Advanced Glycation End Products and Cardio-renal Functions in Diabetic Elderly

Thesis

Submitted for Partial Fulfillment of MD Degree
In Geriatric and Gerontology

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2020

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List of Abbreviations

AHF .....Acute heart failure

AMI.....Acute myocardial infarction

AGER1.....Advanced glycation end products receptor 1

AGEs.....Advanced glycation end products

AD .....Alzheimer's disease

ACE .....Angiotensin converting enzyme

ACEIS.....Angiotensin converting enzyme inhibitors

AT1R.....Angiotensin II type 1 receptor

ARBS.....Angiotensin Receptor Blockers

ADMA .....Asymmetric dimethyl arginine

ABS.....Australian Bureau of Statistics

BBs.....Beta-blockers

BMI.....Body mass index

CCBs.....Calcium channel blockers

CML.....Carboximethyl-lysine

CRS .....Cardio -renal syndrome

CVD .....Cardiovascular diseases

CKD.....Chronic kidney disease

COPD.....Chronic obstructive pulmonary disease

CAD .....Coronary artery disease

CRP .....C-reactive protein

DM.....Diabetes mellitus

DCM .....Diabetic cardiomyopathy

DKD.....Diabetic kidney disease

DN .....Diabetic nephropathy

List of Abbreviations

DBP .....Diastolic blood pressure

EF.....Ejection fraction

ECHO .....Echocardiography

ECG.....Electrocardiogram

ESRD.....End-stage renal disease

ECM.....Extracellular matrix

FBS.....Fasting blood sugar

GBM .....Glomerular basement membranes

GFR.....Gloumular filtration rate

HBA1C.....Glycosylated hemoglobin

Hb.....Hemoglobin

HF .....Heart Failure

HDL.....High-density lipoproteins

IDF .....International Diabetes Federation

IR .....Insulin resistance

IL6.....Interleukin 6

LVEF .....Left ventricular ejection fracture

LVH .....Left ventricular hypertrophy

LDL.....Low density lipoprotein

MG.....Methylglyoxal

MA.....Microalbuminuria

MCP-1.....Monocyte chemo-attract protein-1

MI.....Myocardial infarction

NYHA.....New York Heart Association

NADPH .....Nicotinamide adenine dinucleotide phosphate

List of Abbreviations

NO .....Nitric oxide

OS.....Oxidative stress

PD.....Parkinson's disease

ROS .....Reactive oxygen species

RAGE.....Receptor for AGEs

RAAS .....Renin angiotensin-aldosterone system

SAF.....Skin auto-fluorescence

SBP.....Systolic blood pressure

US.....Ultrasonography

TGF-β.....Transforming growth factor-beta

TG .....Triglyceride

TNF-α.....Tumor necrosis factor α

T1DM .....Type 1 diabetes mellitus

T2DM .....Type 2 diabetes mellitus

VEGF .....Vascular endothelial growth factor

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Abstract

Background: Diabetes mellitus is a group of diseases characterized by metabolic disturbances with increasing prevalence worldwide. Individuals with diabetes mellitus present with several micro- and macro vascular complications such as retinopathy, nephropathy, neuropathy, atherosclerosis and cardiovascular disease. A higher body mass index (BMI) raises the risk of having uncontrolled diabetes and complications related to it, such as heart disease, stroke, kidney failure, nervous system and eye problems. However, recent studies have reported that being overweight may confer a protective effect against all-cause mortality and on the life expectancy of diabetic patients; this has been termed the obesity paradox. The aim to explore the association between BMI and diabetic complications among elderly patients with type 2 diabetes.

Methods: A case-control study was conducted on 60 elderly diabetic males and females aged ≥ 60 years recruited from the inpatient wards and outpatient clinics of Mansoura university hospitals. The sample was divided into 3groups: the first group was comprised of 26 elderly diabetic patients with normal BMI. The second group was comprised of 24 overweight elderly diabetic. The third group was comprised of 10 obese elderly diabetic. Full history taking, clinical examination, BMI measurement (kg/m2) were obtained from all participants.

Results: The current study showed that there was insignificant differences regarding BMI between the study groups. Hyperglycemic and hypoglycemic coma were least frequent among obese cases, while neuropathy was more frequent among cases with normal BMI. But neither of these relationships was statistically significant

Conclusions: Any increase in BMI above normal weight levels was not associated with an increased risk of having complications of diabetes mellitus.

Keywords: Diabetes mellitus; diabetes mellitus complications; body mass index; elderly; Egyptian

INTRODUCTION

Diabetes mellitus (DM) is a metabolic disorder of great impact worldwide ***(Shaw et al., 2010).*** The International Diabetes Federation (IDF) estimates around 415 million people had DM in 2015 and this number is expected to rise to 642 million by 2040 ***(IDF, 2016).***

The prevalence of type 2 diabetes mellitus (T2DM) in Egypt is around 15.6% of all adults aged 20 to 79 years ***(Hegazi et al., 2015).***

The importance of hyperglycemia in the pathogenesis of diabetic complications has been established. Hyperglycemia causes cell injury by formation of advanced glycation end products (AGEs) ***(Duckworth et al., 2009).*** Diabetic patients were shown to have higher AGEs levels when compared with normal individuals ***(Huebschmann et al., 2006).***

AGEs are proteins or lipids that become glycated as a result of exposure to sugars ***(Vistoli et al., 2013).*** Under physiologic conditions, formation of AGEs occurs slowly ***(Goldin et al., 2006).*** Hyperglycemia, hyperlipidemia and oxidative stress(OS) accelerate formation of AGEs by non-enzymatic glycation reactions ***(Beisswenger et al., 2012).***

AGEs accumulate in the human, and the effects of their high concentration are found in every tissue and organs ***(Semba et al., 2009).***