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Scientific Tracks & Abstracts

Day 1

Ma Eugenia Garay-Sevilla et.al., J Obes Weight Loss Ther 2018, Volume 8
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Serum carboxymethyllysine (CML) and its relationship with markers of oxidative stress and insulin resistance in newly diagnosed diabetic patients with obesity and normal weight

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Introduction: Elevated levels of circulating advanced glycation end products (AGEs) as CML are believed to play a major role in the pathogenesis of macrovascular and microvascular disease in diabetes mellitus. Endogenous formation of AGEs is increased in diabetes as the result of hyperglycemia and increased oxidative stress in this condition. Recently, however, it has been demonstrated that food-derived AGEs play a major role in maintaining a high body pool of AGEs in diabetes.

Purpose: Purpose of this study is to evaluate the serum CML and its relationship with dietary AGEs, markers of oxidative stress and insulin resistance in newly diagnosed diabetic patients with obesity and normal weight.

Methodology: The study was performed on 80 newly diagnosed diabetic patients with normal weight (n=40) and with obesity (n=40). Clinical and anthropometric evaluations were performed; a sample of fasting blood was obtained for measured glucose, lipid profile, HbA1c, insulin, serum carboxymethyllysine (CML) and 8-hydroxy 2'-deoxy-guanosine (8-OHdG). The HOMA-IR was calculated according to Matthews et al. Reminders of 24 hours was made to quantify the energy and nutrient consumption and AGE intake was calculated from a database previously published by Uribarri, et al.

Findings: The mean of age of total group was 48.5±7.3 years. The diabetic patients with obesity had higher levels of insulin ($p<0.0001$); HOMA-IR (<0.001); 8-OHdG (<0.00001); CML (<0.00001) and dietary AGEs. In the total group serum CML correlated positively with dietary AGEs ($r=0.27$; $p<0.018$); BMI ($r=0.31$; $p<0.006$); HbA1c ($r=0.31$; $p<0.007$); HOMA-IR (0.63; $p<0.0001$) and 8-OHdG ($r=0.44$; $p<0.001$).

Conclusion: We found significant and strong associations between CML with metabolic control, HOMA-IR and markers of oxidative stress to DNA (8-OHdG). These results support the importance of performing prevention for the development of complications of diabetes since diagnosis.

Biography

Ma Eugenia Garay-Sevilla has more than 20 years of experience in the study of diabetes mellitus and its complication mainly advanced glycation end products. She is a leader in Mexico in the study of these products. She also studies obesity and its comorbidities from early stages of life to adulthood.

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PCSK9 inhibitors: FOURIER study

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Background: Evolocumab is a monoclonal antibody that inhibits proprotein convertase subtilisin-kexin type 9 (PCSK9) and lowers Low-Density Lipoprotein (LDL) cholesterol levels by approximately 60%. Whether it prevents cardiovascular events is uncertain.

Methods: We conducted a randomized, double-blind, placebo-controlled trial involving 27,564 patients with atherosclerotic cardiovascular disease and LDL cholesterol levels of 70 mg per deciliter (1.8 mmol per liter) or higher who were receiving statin therapy. Patients were randomly assigned to receive Evolocumab (either 140 mg every 2 weeks or 420 mg monthly) or matching placebo as subcutaneous injections. The primary efficacy end point was the composite of cardiovascular death, myocardial infarction, stroke, hospitalization for unstable angina or coronary revascularization. The key secondary efficacy end point was the composite of cardiovascular death, myocardial infarction or stroke. The median duration of follow-up was 2.2 years.

Results: At 48 weeks, the least-squares mean percentage reduction in LDL cholesterol levels with Evolocumab, as compared with placebo, was 59%, from a median baseline value of 92 mg per deciliter (2.4 mmol per liter) to 30 mg per deciliter (0.78 mmol per liter) (P<0.001). Relative to placebo, Evolocumab treatment significantly reduced the risk of the primary end point (1344 patients [9.8%] vs. 1563 patients [11.3%]; hazard ratio, 0.85; 95% confidence interval [CI], 0.79 to 0.92; P<0.001) and the key secondary end point (816 [5.9%] vs. 1013 [7.4%]; hazard ratio, 0.80; 95% CI, 0.73 to 0.88; P<0.001). The results were consistent across key subgroups, including the subgroup of patients in the lowest quartile for baseline LDL cholesterol levels (median, 74 mg per deciliter [1.9 mmol per liter]). There was no significant difference between the study groups with regard to adverse events (including new-onset diabetes and neurocognitive events), with the exception of injection-site reactions, which were more common with Evolocumab (2.1% vs. 1.6%).

Conclusion: In our trial, inhibition of PCSK9 with Evolocumab on a background of statin therapy lowered LDL cholesterol levels to a median of 30 mg per deciliter (0.78 mmol per liter) and reduced the risk of cardiovascular events. These findings show that patients with atherosclerotic cardiovascular disease benefit from lowering of LDL cholesterol levels below current targets. LDL cholesterol is a well-established and modifiable risk factor for cardiovascular disease. Monoclonal antibodies that inhibit PCSK9 have emerged as a new class of drugs that effectively lower LDL cholesterol levels. Evolocumab, a member of this class, is a fully human monoclonal antibody that reduces LDL cholesterol levels by approximately 60%. Genetic studies have shown that carriage of PCSK9 loss-of-function alleles is associated with lower LDL cholesterol levels and a reduced risk of myocardial infarction. Moreover, exploratory data from longer-term follow-up in phase 2 and phase 3 trials of PCSK9 inhibitors showed significant reductions in cardiovascular outcomes. However, there were little more than 100 events in these studies combined. Further Cardiovascular Outcomes Research with PCSK9 Inhibition in Subjects with Elevated Risk (FOURIER) was a dedicated cardiovascular outcomes trial that tested the clinical efficacy and safety of Evolocumab when added to high-intensity or moderate-intensity statin therapy in patients with clinically evident atherosclerotic cardiovascular disease.

Biography

Govind Kulkarni has completed MD in Internal Medicine from India and is a Cardiology Research Fellow of Sydney University. He is the Founder of Pulse Diabetes, Obesity and Cardiac Relief Center, India, having interest in clinical research. His special interest is in reversal of diabetes and obesity. He is a Senior Consulting Physician and Metabolic Disorder Consultant in India.

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Kaukab Azeem, J Obes Weight Loss Ther 2018, Volume 8
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Obesity management for quality of life

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Obesity is lifestyle disease which is on the rise around the globe. Early prevention of obesity may ovoid many diseases i.e., coronary heart disease and diabetes. Obesity is preventable and reversible. Obesity is classified as having a body mass index of 30 or greater. Obesity affects people's health and leads to diseases i.e., high blood pressure, diabetes and various cardiovascular diseases. Obesity is a chronic disease and growing threat globally. American College of Sports Medicine (ACSM) Guidelines; frequency: 3 to 5 days/week; duration: 20 to 60 min/day; intensity: 50% to 90% of aerobic capacity (VO2max); mode: Large muscle groups, continuous, aerobic capacity. Guo Siqiang (2017) investigated and reveals that the combined exercise training appears to play a vital role in reducing the risk factors of cardiovascular diseases in elderly women with hypertension. Dennis T (2017) reveals that the weight loss plus combined aerobic and resistance exercise was the most effective in improving functional status of obese older adults. Causes of obesity: Obesity is generally caused by eating too much and moving too little. Moreover, the following are the main causes of obesity: Imbalance of calories intake, poor diet, lack of activity, stress, lack of sleep, genetics, medical reasons and poor life style. Obesity statistics: According to World Health Organization (WHO) stated that in the year 2016, more than 1.9 billion adults, 18 years and older, were overweight. Of these over 650 million were obese. Furthermore, interestingly 39% of adults aged 18 years and over were overweight in 2016 and 13% were obese. Cardiovascular diseases (CVDs) is the number 1 cause of death globally. More people die annually from CVDs than any other causes. An estimated 17.5 million people died from CVDs (WHO, 22 Sep 2016). Reviewed November 2016 by WHO in 2012, an estimated death due to diabetes were 1.5 million and 2.2 million deaths were attributable to high blood glucose. Obesity management: Exercise, diet and lifestyle. Health benefits of exercise: Reduces the risk of coronary artery disease and hypertension, lower the blood pressure, increase HDL cholesterol and lower LDL cholesterol. Greater cardiac output will able to deliver more blood to tissue. Longevity-greater life expectancy and increases metabolism rate. In conclusion, obesity is a worldwide problem. Lately, medical reports consider it as a disease that could lead to many serious health issues such as diabetes, heart problems and blood pressure. So, people should monitor and maintain their food intake, exercise daily and manage healthy lifestyle.

Biography

Kaukab Azeem has received his PhD from Osmania University, India in the year 2006. He is currently working as Assistant Professor in Physical Education Department at the King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia. His research focuses on strength training, aerobics, fitness performance, obesity and changes in body composition. He is also serving as a Supervisor for students of MPhil and PhD program.

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Nutrigenomics: Personalized weight management approaches

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Since the completion of Human Genome Project, continuous efforts have been made to elucidate and decode their functionalities of the gens, to understand the cause or the origin of diseases. While experts continue to study genes, a fair amount of light has been shed on the genetic factors responsible for disease development and progression, thus allowing scientists to design diagnostic and treatment tools employing this knowledge. From hypertension to cancer, genes can help to understand management of a disease in a more precise manner as compared to the conventional approaches alone. This science is known as nutrigenomics. Nutrigenomics can aid in weight loss in individuals suffering from stubborn obesity and can provide useful insight into the metabolism of the individual. Such diet and exercise recommendations based on genetic analysis of an individual are also called as personalized diet/exercise recommendations. Genetics can help us understand various useful aspects of diet and exercise plan, such as suitable protein:carbohydrate:fats ratio in a person's diet, responsiveness to high intensity exercises, circadian rhythm and exercise responsiveness, etc. Such personalized diet and exercise recommendations can certainly help individuals achieve weight loss in a more efficient, rapid and scientific manner.

Biography

Archana Badve is a Nutrition and Yoga Trainer from India and is the Co-Founder of Pulse Diabetes, Obesity and Cardiac Relief Centre, Pune, India having interest in clinical research. She has participated in multiple workshops of nutrition and yoga. Her main interest is in neutrogenomics and its application in obesity management. She is Neutrogenomic Councilor and attached to gene support genetic lab in Pune India.

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Shaodong Guo, J Obes Weight Loss Ther 2018, Volume 8
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Disease mechanisms and dietary intervention for obesity and T2DM

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Insulin resistance serves as the major mechanism for the development of obesity, which is pandemic in population worldwide over the past decades, largely owing to over nutrition. Excess energy stores in the adipose tissue and other organs as lipids, promoting lipotoxicity and metabolic inflammation, activating intracellular protein kinases to impair insulin signaling components and resulting in insulin resistance. Insulin resistance is the key etiologic illness that defines metabolic syndrome, a set of interrelated disorders/issues, inclusive of obesity, hyperglycemia, dyslipidemia and hypertension. Following insulin resistance, a lot of patients with the metabolic syndrome sooner or later developed pancreatic β-cell failure, which triggers the onset of Type-2 Diabetes Mellitus (T2DM) and its complications. Our cell and animal-based totally studies demonstrate that insulin and its signaling cascades generally control cell growth, metabolism and survival through activation of Mitogen-Activated Protein Kinases (MAPKs) and Phosphotidylinositide-3-Kinase (PI3K), of which activation of PI-3K-associated with Insulin Receptor Substrate-1 and -2 (IRS 1, 2) and subsequent Akt→Fo xo1 phosphorylation cascade has a central function in control of nutrient homeostasis and organ survival. Inactivation of Akt and activation of Foxo1, through suppression IRS1 and IRS2 in a variety of organs following over nutrition, lipotoxicity and inflammation may form a fundamental mechanism for insulin resistance in humans. This seminar discusses the premise of insulin signaling, resistance and how excess nutrients and lipid signaling from obesity promotes infection and insulin resistance, selling organ failure with emphasis on the IRS and the fork head/winged-helix transcription component Foxo1.

Biography

Shaodong Guo is an Associate Professor in the Department of Nutrition and Food Science at Texas A&M University College. He has received his PhD in Physiology from Peking University, China. Later, he has completed his Postdoctoral research training in Genetics, Biochemistry and Medicine in the Chinese Academy of Sciences, the University of Illinois at Chicago and Harvard University, respectively. He was an Instructor in Medicine at Children's Hospital Boston and Harvard Medical School for two years prior to joining the Faculty at Texas A&M Health Science Center. Currently, he serves as a Senior Editor for the Journal of Endocrinology and Journal of Molecular Endocrinology, two major official journals of Endocrine Society of Europe, UK and Australia and he is the author of the textbook chapter for metabolic syndrome and published by Springer in 2016. His lab research focuses on insulin/glucagon and estrogen signal transduction, insulin resistance, gene transcriptional control of nutrient homeostasis and cardiac dysfunction in diabetes. He is a recipient of ADA Junior Faculty Award, Career Development Award and Richard R Lee Award. His work has been published in several journals including the JBC, Endocrinology, Hypertension, Diabetes, Circulation Research, AJP, MCB and Nature Medicine, receiving more than 5,000 citations from the Google Scholar.

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Obesity profile in Mumbai University

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Background & Aim: Overweight and obesity are defined as abnormal or excessive fat accumulation that presents a risk to health. It is a serious international public health problem which urgently needs action on a global scale. To prevent and manage overweight and obesity, systematic assessment and evaluation is very essential. The present study aimed to observe the fat profile of the Mumbai University employees.

Method: Total 30% data were collected from total 100 teaching and non-teaching permanents faculties of University of Mumbai in 2018. The sample was collected on random sampling basis. Height (cm), Weight (kg) and Visceral fat % measured by Omron Karada scan 370. BMI were calculated as per WHO methods and criteria.

Result: Body mass index was measured and observed, according to obtained data from both the categories of employees it has been seen that 73.80% teaching faculty has higher level of body fat % whereas non-teaching faculty has 95.07% higher level of body fat %. On the other hand 26.19% and 4.92% teachers and non-teachers having normal range of body mass index, respectively. Visceral fat % reference normal range is given 0.5-9.5. Accordingly 65.88% teachers and 50.69% non-teachers has more than 0.5-9.5 range of visceral fat %, rest of 34.11% and 49.30% teaching and non-teaching employees having normal visceral fat %, respectively.

Conclusion: The teaching and non-teaching employees BMI profile found 73% population having higher fat percentage.

Biography

Madhuri Sadgir is currently working as an Assistant Professor at the Department of Physical Education, University of Mumbai, India.

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