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Meeting Abstracts

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Keynote Presentations

Low-Carb Diets in the Treatment of Obesity- History and Actual Situation

Udo Rabast

German Academy of Nutritional Medicine, Germany

Abstract

Low carbohydrate diets are a matter of controversy for more than hundred years. From time to time this kind of diets are highly popular. In between also opponents are seeing this therapeutic option not only negative. Low-carb-diets are associated with the name of Atkins and his treatment method with an unlimited supply of fat and protein combined with the extreme reduction of carbohydrates. Initially only 20 g of carbohydrates are recommended. Although energy supply is unlimited, obese people will lose weight. - If one main nutrient (carbohydrates or fat) is eliminated in the daily diet, a caloric restriction of 600-800 kcal/day results. Supporter of low-carb-diets don`t see this as the only cause for the weight reduction. - In own comparative studies with energetically limited, isoenergetically diets the weight reduction was higher with low- carb – compared with the high carb diets. Newer studies confirmed these results. - Some metabolic effects are positive (decrease of insulin and triglycerides, increase of HDL-concentration). Negative effects are the increase of ketone bodies and uric acid. The higher risks for uric acid- and oxalic-acid stone formation in the kidney is discussed. - There is no ideal solution for the treatment of obesity. Low-carbohydrate diets are only one therapeutic option. Positive is the high value of satiety. This improves the adherence to the diet and compared to other dietetic treatments a more pronounced weight loss can be expected. A significant higher weight loss could be seen regularly in controlled studies with formula diets. Studies with mixed diets should not be compared with formula diet studies. A permanent use of a low carbohydrate, high fat diet (carbohydrate consumption (<40%)) should be avoided as well as a permanent high carbohydrate consumption (>70%). The lowest health risk seems to be given with a diet with 50-55% carbohydrate.

Sclerostin: A Marker of Early Detection of Atherosclerotic Disease in Obesity

Edita Stokic

University of Novi Sad, Serbia

Abstract

Obesity is a chronic disease associated with an increased risk of developing type 2 diabetes and cardiovascular disease. Moreover, a better understanding of cardiometabolic risk can help to identify those obese patients who should be candidates for early therapeutic intervention. Sclerostin is a potent inhibitor of Wnt signalling (Wingless-type mouse mammary tumour virus integration site family/β-catenin signalling pathway) and has an important role in osteoblast biology. Recent clinical, experimental and clinical studies have demonstrated that Wnt/β-catenin signalling is related to the pathogenesis of osteoporosis, type 2 diabetes, metabolic disturbances, atherosclerosis, and other diseases.

In our investigation, we have evaluated the association between sclerostin levels, cardiometabolic risk and subclinical carotid atherosclerosis (SCA) in obese patients. The presence of pathologically increased carotid artery intima-media thickness and/or presence of carotid plaque was defining the presence of SCA. Sclerostin levels significantly inversely correlate with subclinical carotid atherosclerosis ($r = -0.29$, $p < 0.05$). The group of obese patients with lower sclerostin levels has a significantly higher

incidence of SCA, while other traditional proatherogenic risk factors, including anthropometric characteristics, inflammatory, glucose and lipid, and lipoprotein parameters, do not significantly correlate with the presence of SCA.

Serum sclerostin level could serve as a useful biomarker of early atherosclerosis in obese persons without a previous history of cardiometabolic disturbances. Further research is required to provide evidence the role of circulating sclerostin in development cardiometabolic disturbances and early atherosclerosis in obesity.

Reference

1. Popovic DS, Mitrovic M, Tomic-Naglic, D, Icin T, Bajkin I, et al. 2017. The Wnt/β-catenin Signalling Pathway Inhibitor Sclerostin is a Biomarker for Early Atherosclerosis in Obesity. Curr Neurovasc Res 14(3): 200-206. https://doi.org/10.2174/1567202614666170619080526

An Online Physical Activity Training Program to Prevent Falls in Obese Older Adults

Amanda Rees[1], Hari Arul[1], Emma Rastatter[1] and Randall S. Stafford[2*]

[1]Age Bold Inc, San Mateo CA 94402, USA
[2]Stanford University School of Medicine, Stanford CA 94305-5411, USA

Abstract

Falls in older adults often precipitate other adverse health outcomes. Programs providing physical activity training to at-risk individuals have proven effective in decreasing fall rates by 25% as well as reducing fractures and health care utilization. Unfortunately, uptake of these programs has been modest. Significant barriers to adoption include geographic accessibility, program cost, scheduling, impaired mobility of at-risk patients, and failure to tailor activities for conditions such as obesity.

Bold is a digital physical activity program designed to overcome these barriers. We describe the development, deployment, and testing of Bold's fall prevention program tailored to obese older adults. Bold has four components: 1) Initial survey assessment combined with online physical testing of strength, mobility and balance, 2) A 12-week graded program of digital exercise classes led by trained fitness instructors that includes seated at-home exercises for those with reduced mobility from obesity, 3) Periodic re-testing of physical function along with personalized guidance to appropriately select exercises, and 4) A maintenance function to encourage long-term video class participation. Bold provides an accessible, flexible and low-cost method of overcoming existing barriers to falls prevention training with tailoring to match patient-specific needs and abilities. To demonstrate Bold's value, two stages of testing are planned: 1) A 6-month feasibility study involving 150 participants measuring before vs. after improvements in physical function and fall rates, and 2) A randomized comparative effectiveness clinical trial that compares fall rates in 200 Bold participants compared to randomized controls. These investigations will gauge the intervention's cost-effectiveness and impact in diverse subpopulations, including for obese participants. These studies will evaluate Bold's value and lead to program refinements.

Featured Presentations

Laparoscopic Management of Severe Reflux After Sleeve Gastrectomy Using the LINX System

A. Hawasli*, M. Sadoun and A. Meguid

Ascension St. John Hospital, Detroit, MI, USA

Abstract

Introduction: Management of severe reflux after sleeve gastrectomy is often done by conversion to Roux-en-Y gastric bypass. The introduction of the LINX^{R} system can be a viable alternative to manage this problem.

Materials and Methods: Thirteen patients with severe reflux after sleeve gastrectomy were treated using the LINX^{R} system to manage their reflux. All patients had a barium swallow, endoscopy with Bravo^{R} capsule pH monitor and esophageal motility.

Results: Ten females and three males with an average age of 49+13 yrs. Eleven patients had reflux before the sleeve. Initial weight before the sleeve was 268.8 + 49.7 lbs. and BMI of 46.3+7.5 kg/m^2. All patients lost weight. The average time between the sleeve and the placement of the LINX^R system was 43.1 + 19.3 months. All patients had 2 cm hiatal hernia or less with Bravo pH score of 46.2 + 25.7. Five patients had esophagitis. The operative time was 79.4 + 23.4 min. and hospital stay was 1 day. There were no intra-operative complications. All patients had mild dysphagia but felt better control of their reflux except one who had severe dysphagia and demanded removal of the LINX^R system after 18 days of its placement. The average follow-up was 13.9 + 9.6. The GERD-HRQL score in 6 patients who completed the pre and post-operative survey showed a drop from 46.2/75 + 19.8/75 to 7.67/75 + 5.4/75.

Conclusion: Using the LINX^R system for management of severe reflux after sleeve gastrectomy can be an alternative to the conversion to Roux-en-Y gastric bypass.

A Novel Risk Score to Predict Vascular Events in Diabetes

Mark Woodward*

The George Institute for Global Health, University of Oxford, Oxford, UK

Abstract

We aimed to formulate a combined cardiovascular risk score in diabetes that could be useful both to physicians and healthcare funders. Data were derived from the Action in Diabetes and Vascular Disease: Preterax and Diamicron Modified Release Controlled Evaluation Observational (ADVANCE-ON) study, a randomized controlled trial (mean duration 5 years) with a post-randomization follow-up (mean 4.9 years), that included 11 140 high-risk patients with diabetes. The outcome analyzed was the occurrence of either fatal or non-fatal macrovascular or renal disease. A Cox regression model was used to determine weightings in the risk score. The resultant score was recalibrated to each of three major global regions, as covered by the ADVANCE-ON study. Over a median of 9.9 years, 1145 patients experienced at least one component of the combined outcome event. The resultant score, the AD-ON risk score, incorporated 13 demographic or clinical variables. Its discrimination was modest [c-statistic = 0.668 (95% confidence interval 0.651, 0.685)] but its calibration was excellent (predicted and observed risks coincided well, within disparate global regions). In terms of the integrated discrimination improvement index, its performance was marginally superior, over a 10-year risk horizon, to existing risk scores in clinical use, from a restricted version of the same data, for macrovascular and renal disease separately. This has advantages in simplicity of use and global application over the existing vascular risk scores in diabetes, including those from the original ADVANCE trial, which treat macrovascular and renal diseases separately.

The Safety and Efficacy of Weight Loss via Intermittent Fasting or Standard Energy Restriction in Patients with Type 1 Diabetes and Overweight or Obesity: Results of a 12 Month Pilot Study

Jane Overland[1, 2*], Krisztina Toth[3], Alice Gibson[2], Amanda Sainsbury[2], Janet Franklin[4], Amanda Gauld[1] and Jencia Wong[1, 2]

[1]*Diabetes Centre, Royal Prince Alfred Hospital, Australia*
[2]*The University of Sydney, Faculty of Medicine and Health Sciences, Australia*
[3]*Metabolic Unit, Royal Prince Alfred Hospital, Australia*
[4]*Metabolism and Obesity Service, Royal Prince Alfred Hospital, Australia*

Abstract

Objective: A pilot study to examine the safety and efficacy of weight loss via intermittent fasting or continuous energy restriction in adults with type 1 diabetes and overweight or obesity.

Methods: Ten adults with type 1 diabetes and overweight or obesity (8 women, 2 men) were randomized to either severe energy restriction (2,510 kilojoules per day) on two 24-hour periods per week with 5 days per week of eating to appetite, or continuous moderate energy restriction (30% relative to weight maintenance energy needs) for 12 weeks. Participants were followed to 12 months.

Results: There were no adverse events during the study, and rates of hypoglycaemia were unchanged. Body weight was reduced from baseline (P<0.05) by both intermittent fasting (-7.0%, range -5.2% to -8.0%) and continuous energy restriction

(-3.9%, range -1.0% to -11.1%). Trunk fat was also reduced by these two interventions (P<0.05) (-12.2%, range -1.0% to -15.3% and -10.1%, range 2.3% to -10.7%, respectively). Body weight remained stable within 1 kg during the week 13 to week 52 follow up in both groups however maintenance of clinically and statistically significant weight loss at the 52-week follow-up time point was only seen in the intermittent fasting group (-6.5%, range -7.9% to -4.1% and -2.5%, range -13.3% to -1.7%, respectively; P<0.05 compared to baseline within group).

Conclusion: These findings suggest that both intermittent fasting or continuous energy restriction are safe and effective weight loss approaches for people with type 1 diabetes and overweight or obesity.

Time Restricted Feeding for Metabolic Disease and Cancer

Nicholas Webster[1,2*], Manasi Das[2], Deepak Kumar[1,2], Emilie Gross[2], Hyuntae Park[2], Lesley Ellies[3], Consuelo Sauceda[1,2], Dorothy Sears[2] and Isabel Newton[4]

[1]VA San Diego Healthcare System, USA
[2]Department of Medicine, University of California San Diego, USA
[3]Department of Pathology, University of California San Diego, USA
[4]Department of Radiology, University of California San Diego, USA

Abstract

Clinical data point to a strong association between obesity, metabolic disease and postmenopausal risk for breast cancer. Thus, a dietary intervention that reduces insulin resistance should be beneficial. Although caloric restriction or intermittent fasting reduces breast cancer risk biomarkers, these interventions are not practical outside of a controlled setting due to poor compliance. We have investigated time-restricted feeding (TRF) as an intervention that does not alter diet composition, or food intake, that could improve metabolic and reduce breast cancer growth. Restricting food intake to a set number of hours aligned with the active phase is well-tolerated in humans and does not trigger hunger and irritability found with caloric restriction or other fasting interventions.

Mechanisms underlying the beneficial effects of TRF are not fully understood, although recent human studies suggest that the regulation of nutritional cues due to the enforced diurnal feeding/fasting cycle in TRF provides an entrainment signal to the liver and other tissues that synchronizes and reinforces the endogenous circadian rhythms. While the central circadian clock is driven by the brain's suprachiasmatic nucleus in response to light, peripheral tissues have clocks that are sensitive to nutrient signals. High-fat diet-induced obesity dampens or desynchronizes circadian rhythms in the liver, but rhythms can be restored by restricting the time of access to food. I will present our recent data showing improvements in liver metabolism and insulin sensitivity with TRF and will present new data on inhibition of breast and liver cancer.

Maternal Obesity and Pregnancy Outcome

Birgit Seelbach-Göbel* and Susanne Artus

Klinik für Geburtshilfe und Frauenheilkunde der Universität Regensburg St. Hedwig, 93049 Regensburg

Abstract

29100 women giving birth between 2000 and 2015 were analyzed with regard of overweight or obesity in a restrospective single center study.The prevalence of overweight was 19,7% . The highest prevalence of extremely obese women (BMI >=40, Group V) was 2% in 2015. The Percentage of >= 1 para increased from 46,8% in normal weight (BMI 18,5-24,9, Group I) to 59,8% in obese women (BMI 35-39,9, Group IV). 1,9% of I had preexisting diabetes, 6, 7% in V. 0,2% of I and 2,4% of V had chronic hypertension. Weight gain recommended by IOM was exceeded by 36,1% in I and in 64,7% in III (BMI 30-34,9). 9% of I developed gestational diabetes and 28,2% of V. 2,3% of I developed preeclampsia-and 7,4% of V .These differences were statistically significant. No difference was found in the occurrence of mental stress . The percentage of labor induction increased from 25,8% in I women to 41,3% in V , the overall cesarean section rate increased from 25,7% to 40%. In case of vaginal delivery 2% of V suffered from shoulder dystocia and 0,7% of I. Prolonged labor in the first stage was not more frequent in obese women, prolonged labor in the second stage was even more often found in the normal weight group. The baby's mean birth weight and the rate of LGA infants increased with maternal weight. Fetal outcome was slightly poorer in V than in I. More children of obese mothers were transferred to NICU.

Session 1: Childhood Obesity: Treatment and Prevention; Genetic Link of Obesity; Insights on Nutritional Findings and Eating Disorders

Anti-Obesity Properties of *Viburnum opulus* Juice

Małgorzata Zakłos-Szyda*, Nina Pawlik, Dominika Polka, Maria Koziołkiewicz and Anna Podsędek

Institute of Technical Biochemistry, Lodz University of Technology, Stefanowskiego 4/10, 90-924 Lodz, Poland

Abstract

Due to its antioxidant, hepatoprotective, high blood pressure lowering and anti-inflammatory activities guelder rose (*Viburnum opulus*) has been used as a traditional medicine for treatment of various cardiovascular or gastrointestinal ailments. Recently, the interest in its application as a preventive agent against diet-related chronic diseases, such as obesity and type 2 diabetes, has increased. The most biologically active phytochemicals identified in *V. opulus* fruits are phenolic compounds and iridoids. Our studies have revealed that guelder rose fruit polyphenolic extract acts as an inhibitor of enzymes involved in lipids and carbohydrates metabolism, such as lipase, α-amylase, α-glucosidase and PTP-1B phosphatase. Further studies revealed that it significantly prevented lipid accumulation and impaired the differentiation of 3T3-L1 preadipocytes into adipocytes via downregulation of the expression of key adipocyte differentiation regulatory factors: peroxisome proliferator-activated receptor gamma (PPARγ) and its coactivator 1-alpha (PGC-1α), retinoid X receptor α (RXRα) and CCAAT/enhancer-binding protein alpha (C/EBPβ/α). These results suggest that *V. opulus* fruit has potential as a novel anti-obesity agent, however further investigation is needed to determine the molecular mechanisms of its action.

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The Prevalence and Potential Determinants of Obesity among Emirati Children and Adolescents in UAE

Abdishakur Abdulle[1*], Abdulla Al Junaibi[2] and Nico Negelkerke[3]

[1]*Public Health Research Center (PHRC), New York University Abu Dhabi, United Arab Emirates*
[2]*Department of Pediatrics, Zayed Military Hospital, Abu Dhabi, United Arab Emirates*

Abstract

Aims and Objectives: To investigate the prevalence, determinants, and potential impact of childhood obesity (CHO) in the Emirate of Abu Dhabi.

Methods: 1541 students (grade 1-12) were randomly selected from 246 schools (50% boys). We used body mass index (BMI) percentile charts from the Center for Disease Control (CDC) to classify children's weight status.

Results: 1440 (93%) students and their parents provided complete results. Among nationals (n=1035), a prevalence of underweight (8.3%), overweight (14.2%), and obesity (19.8%) was observed. Overweight was more common in females than males (16.7% vs. 11.6%; p<0.01), whereas obesity was more common, though not significantly so, in males than females (21.4% vs. 19.8%; p<0.09) and significantly (P<0.001) increased with age.

Stepwise linear regression of BMI percentile on age, sex, dairy consumption, exercise, and family income showed only a significant (p<0.01) positive association with age, and lack of dairy consumption. BP significantly (P<0.01) increased with BMI percentile.

Only 23.4% of parents (n=1331) correctly identified their children's weight status. True overweight/obesity status [OR: 22.1 (95% CI 11.2-43.8)], mean parental BMI [OR: 1.08 (95%CI 1.02-1.15)], and mother's education [OR: 0.75 (95% CI 0.57-0.98)] significantly affect parental identification.

Conclusion: Overweight and obesity is significantly high across age spectrum among children and adolescents. Age, gender, lack of dairy consumption, and parental BMI are independent determinants of CHO. BMI percentile is associated with higher BP. Majority of parents either overestimated or, more commonly, underestimated their child's weight status. Prevention strategies should focus on younger children, particularly, children of obese parents.

Trends of Underweight and Obesity Prevalence Among Adolescent Girls in the Selected Population of the Silesian Agglomeration

Wojciech Pałasz[1*] and Katarzyna Ziora[2]

[1]*Mediana, General Practitioner Office, Poland*
[2]*Medical University of Silesia, Poland*

Abstract

Objective of the Study

Determination of the actual and retrospective (at the age 14) state of nutrition in the examined population of 18-year-old girls.

The answer to the question whether the examined group exhibits the tendency to consolidate abnormalities in terms of the body weight over time.

Material and Methods

1047 female students of secondary schools, aged 18, were subjected to anthropometric measurements and took part in a survey questionnaire devoted to their eating habits.

Results

Subjects at the age of 14 : 79.7% (normal body weight), 14.9% (obese), 5.4% (underweight).

Subjects at the age of 18 : 76.6% (normal body weight), 17.2% (obese), 6.2% (underweight).

4.7% of the girls with a normal weight aged 14 reduced their body weight, and 9.2% became obese at the age of 18.

None of the underweight subjects demonstrated obesity at the age of 18.

66% of the girls who were obese at the age of 14 maintained their obesity at the age of 18.

Conclusions

Most girls in the examined population at 14 and 18 years of age demonstrate a normal nutrition state. Obesity was observed in 15% of the examined females at the age of 14 and in 17% at the age of 18, whereas 5% of girls aged 14 and 6% of girls aged 18 are underweight.

From early to late adolescence a tendency to persistent abnormalities of the nutritional status is observed in girls.

Obesity in girls aged 14 is a predictor for obesity at the age of 18 and perhaps in the adult life.

Session 2: Chronic Diseases Linked to Obesity

Inflammatory Cytokines or Melatonin and Adipocyte Function in a Cell Culture Model

Saraswathy Nair*, Paola Vidal, Roman Sanchez-Martinez, Adrian Maldonado, Lucas Montoya, Valeria Gonzalez, Tristan Cavazos and Masoud Zarei

University of Texas Rio Grande Valley, TX, USA

Abstract

Obesity and associated comorbidities such as insulin resistance, diabetes, hypertension and cardiovascular diseases are associated with inflammation. The roles of inflammatory cytokines interleukin-6 (IL-6) and Tumor necrosis factor alpha (TNFα) in adipocyte function in the pathogenesis of obesity, insulin resistance and diabetes are not fully understood. In the meanwhile, there is emerging evidence that Melatonin can convert energy storing white adipocytes to energy expending, metabolically active

brown adipocytes. In our laboratory we investigate the effects of inflammatory cytokines as well as Melatonin on adipocytes *in vitro* using the 3T3-L1 model. We examine the acute and chronic effects of cytokines and melatonin on adipocyte function, mitochondrial health and adipocyte (white and brown adipose tissue specific) gene expression. IL6 has lesser pharmacological effect than TNF α on adipogenesis, lipolysis, mitochondrial dynamics and adipocyte gene expression, although both cytokines increase lipolysis and mitochondrial fission and reduce mitochondrial function in cultured adipocytes. Melatonin on the other hand increases brown adipocyte type lipogenesis and lipolysis. Preliminary data do not suggest that melatonin affects mitochondrial biogenesis and function. Our long-term goal is to contribute to the increasing body of knowledge on factors affecting adipocyte biology and function which are critical in maintaining human health.

Maternal Exposure to the Production of Fireworks and Reduced Rate of New Onset Hypertension in Pregnancy

Shi Wu Wen[1*], Mei-ling Luo[2], Hong-zhuan Tan[2], Ri-hua Xie[3], Shu-jin Zhou[4], Ravi Retnakaran[5], Graeme Smith[6], Mark C. Walker[1], Sandra T. Davidge[7] and Jacquetta Trasler[8]

[1]Ottawa Hospital Research Institute, Canada
[2]Central South University, China
[3]Southern Medical University, China
[4]Liuyang Maternal and Child Hospital, China
[5]Mount Sinai Hospital, Canada
[6]Queen's University, Canada
[7]University of Alberta, Canada
[8]McGill University, Canada

Abstract

Background: Laboratory investigations suggested that nitric oxide (NO) and carbon monoxide (CO) may have protective effect on the development of hypertension of pregnancy under. No study in human pregnancy has examined the associations of NO and CO exposure with hypertension of pregnancy. During the production of the fireworks, substances including NO_x and CO are released into the atmosphere. We hypothesized that women resided close to fireworks factories may have lower rate of new onset hypertension because they may have exposed to elevated levels of NO and CO in pregnancy.

Method: Density of fireworks factories was defined as the number of fireworks factories per 1,000 residents in the township where the mothers resided during pregnancy. Multiple logistic regression analysis was used to analyze the independent association between maternal exposure to the production of fireworks and new onset hypertension in pregnancy.

Results: A total of 6,118 pregnant women were included in the final analysis. Density of fireworks was correlated inversely with incidence of new onset hypertension in pregnancy (Pearson correlation coefficient = -0.27, $P<0.001$). Multiple logistic regression analysis showed that, compared with women who resided during pregnancy in a township with 0~0.25 fireworks factories per 1,000 residents, the rate of new onset hypertension in pregnancy in women who resided in a township with >1.5 fireworks factories per 1000 residents was reduced by about 40% (odds ratio = 0.60, 95% confidence interval: 0.43, 0.85).

Conclusion: Maternal exposure to the production of fireworks appears associated with reduced risk of developing new onset hypertension in pregnancy

Correlation Between Serum Leptin, Cytokines, Cartilage Degradation and Functional Impact in Obese Knee Osteoarthritis Patients

Naglaa Abdelmohsen Hussein

Albert Einstein College of Medicine, NY, USA

Abstract

Aim: correlate between serum leptin, matrix metallo-proteinas 13(MMP13), cytokines; Interleukin 1β (IL1β), Tumor necrosis factor (TNF α), nitric oxide (NO) and functional impact in obese patients with knee O.A.

Materials & Methods: a cross sectional study at outpatient setting including 84 obese patients (with body mass index (BMI) ≥30) suffering from primary knee OA. outcome measures: BMI, knee examination, pain by visual analogue scale (VAS),

Lequesne 's index, seum leptin, MMP13, IL1β, TNF α & NO.

Results: Mean age 54.64 ± 7.7. Female 85.7%, male 14.3%. Mean BMI 35.29 ± 4.8. bilateral knee effusion in 64.3%, unilateral effusion in 7.17% and no effusion in 28.6%. Knee deformity in 71.4%. Mean VAS 8.5 ± 1.5. Mean Lequesne index 14.5 ± 4.4. Female patients had only significantly higher Lequesne's index (mean 15.08 ± 4.3, p = 0.003). Patients with knee deformity had significantly higher VAS(mean 9.12 ± 1.33, p = 0.001), IL1 β(mean 621.05 ± 98.83 pg/ml, p = 0.001), TNF α(mean 115.43 ± 29.1pg/ml, p = 0.001), NO(mean 67.32 ± 5.70 micro mol/L, p = 0.001), MMP13 (mean 33.98 ± 2.24 ng/ml, p = 0.012) and leptin (mean 13.17 ± 1.63, p = 0.004) than those without deformity. Patients with bilateral knee effusion had significantly higher all tested clinical and laboratory variables compared with those with unilateral effusion or without effusion. Leptin was significantly correlated with BMI (p = 0.0001), VAS (p = 0.0001), Lequesne's index (p = 0.0001), IL1β (p = 0.0001), TNF α(p = 0.0001), NO (p = 0.0001) and MMP13 (p = 0.0001).

Conclusion: leptin is proportionate with the degree of obesity and is extremely related to the degree of inflammation and cartilage degradation in obese patients with knee osteoarthritis, hence the severity of Knee OA. cartilage degradation.

Closing the Gap in Conservative Obesity Therapy: A Fully Health Insurance-Financed Obesity Program

Haiko Schlögl

University Hospital Leipzig, Germany

Abstract

The University Hospital Leipzig offers a long-term (i.e., four years long) conservative treatment program for patients with obesity grades 2 and 3 (i.e., body mass index >35 kg/m^2), which is completely covered by a public health insurance company. Anthropometric measures like body weight, waist and hip circumference, metabolic and psychological parameters were collected prior to the start of the program and after completion of the first year of treatment. In total, 243 persons completed the treatment year. The treatment costs were 2,022 € per patient on average. Patients lost a mean of 5 kg or 4% of their initial body weight. The HbA1c value decreased from 5.9% to 5.6% in all patients and from 6.7% to 6.2% in diabetic patients. Further metabolic (e.g., low density lipoprotein and total cholesterol) and psychological (e.g., quality of life) parameters improved significantly as well.

This real-world data shows that obesity treatment, which is completely covered by a public health insurance company, can reach clinically significant improvements. The treatment program of the University of Leipzig improves long-term treatment of obesity in Germany.

Cardiovascular Multimorbidity, Pharmacotherapy and Outcomes in Patients with Concomitant Diabetes, Obesity: Real Practice Data

Mikhail Loukianov[1*], Oxana Drapkina[1], Sergey Martsevich[1], Sergey Yakushin[2], Kristina Pereverzeva[2], Alexander Vorobyev[2] and Sergey Boytsov[3]

[1]National Medical Research Center for Preventive Medicine, Russia
[2]Ryazan State Medical University named after Academician I.P.Pavlov, Russia
[3]National Medical Research Center of Cardiology, Russia

Abstract

Aim: To study the multimorbidity, pharmacotherapy and outcomes in patients with diabetes and/or obesity within the outpatient prospective Registry of Cardiovascular Diseases (RECVASA).

Methods: 3690 patients with cardiovascular diseases (CVD) were enrolled. 481 (13.0%) of patients had diabetes without obesity (group 1, age 69.5 ± 10.7; 19.8% men), 309 (8.4%) - obesity without diabetes (group 2; 61.2 ± 13.4; 25.9% men), 218 (5.9%) – combination of diabetes and obesity (group 3; 63.9 ± 10.5; 19.5% men), 2682 (72.7%) – had no diabetes and obesity (group 4; 67.1 ± 13.1; 30.9% men). 4-year follow-up was performed. Lost to follow-up was 4.8%. Association between administration of ACEI/sartans, statins, beta-blockers, calcium channel blockers, antiplatelets, diuretics and mortality during 4-year follow-up period was analyzed.

Results: The number of CVD in groups 1 and 3 (2.75 ± 0.97; 2.79 ± 0.84) was bigger than in group 4 (2.51 ± 0.97), p = 0.02 and p = 0.001. Mortality in groups 1 (23.5%) and 3 (15.1%) was higher than in group 4 (13.8%) - HR = 1.86, p = 0.001

and HR = 1.65, p = 0.006 (adjusted to age, sex). We revealed significant association between administration of ACEI/sartans, statins and lower risk of mortality in diabetics (groups 1 and 3 altogether; HR = 0.57, CI 0.34-0.81 and HR = 0.61, CI 0.37-0.92) and in non-diabetics without obesity (group 4; HR = 0.67, CI 0.39-0.88 and HR = 0.70, CI 0.42-0.95).

Conclusions: Patients with CVD, concomitant diabetes both with and without obesity compared with non-diabetics without obesity had bigger number of CVD, higher all-cause mortality. Administration of ACEI/sartans, statins was associated with lower risk of all-cause mortality during 4-year follow-up in diabetics with/without obesity and in non-diabetics without obesity.

Enhanced Responsiveness to Injury: Link between Obesity and Chronic Disease

Michael Mendall

Croydon University Hospital, United Kingdom

Abstract

Both obesity a serum C-reactive protein (CRP) are associated with future risk of most chronic diseases and even risk of death from external trauma. What circulating levels of serum C-reactive protein and other inflammatory markers signify is however open to contention, interpretations varying between reverse, causation, and the pro-inflammatory effects of circulating cytokines. Mendelian randomization studies make this unlikely for CRP but possible for IL-6.

In the only study of its kind we previously demonstrated that the dynamic CRP response to a standardized injury (unilateral inguinal hernia repair) was related not only to baseline CRP and age but most strongly to waist: hip ratio[1]. The finding that age and waist: hip ratio influence baseline and post-operative CRP levels to a similar extent suggests that baseline CRP is a measure of inflammatory responsiveness to casual stimuli and that higher age and obesity modulate the generic excitability of the inflammatory system leading to both higher baseline CRP and higher CRP response to surgery.

We propose that this is the mechanism linking abdominal adiposity to a wide range of chronic disease outcomes: environmental damage produces a greater degree of site-specific unresolved inflammation, hence promoting disease. Examples could include atherosclerosis at the site of arterial wall stress from hypertension, cancer of the esophagus at the site of acid reflux damage, and osteoarthritis in non-weight bearing joints. It would also explain why deaths from external trauma are greater in the obese: they are not more likely to experience trauma but are more likely to die if they do.

The Immediate Reduction in Insulin Resistance During the First Week After Bariatric Surgery in Type 2 Diabetes Mellitus

I. Pinchuk, H. Spivak, N. Goldstein, E. Weiss Shwartz, D. Lederfine and M. Rubin*

Department of Surgery C, Sheba Medical Center, Tel-Hashomer, Tel-Aviv University, Tel-Aviv, Israel

Abstract

Objectives: Laparoscopic sleeve gastrectomy has been shown to have a long-term antidiabetic effect; the immediate response is evaluated. The changes in glucose metabolism, oxidative stress and cytokine profiles and in gene expression are studied as a possible mechanism.

Methods: The study included 21 obese diabetic participants Weight parameters and blood samples were taken few hours before the surgery following overnight fast, seven days and 3 months after the surgery. Insulin resistance was expressed using HOMA-IR units. Oxidative stress was measured using the lipid peroxidation in the serum. RNA was derived from the peripheral white blood cells and used in Real-Time PCR to determine gene expression of Sirt1, PGC1-α. Cox2, INOS. Cytokine production by peripheral blood mononuclear cells was determined by ELISA kits.

Results: 1 week after surgery, reduced hemoglobin A1C (7.63 to 7.31, P<0.001), insulin (24.96 to 10.92, P<0.05), insulin resistance (HOMA-IR, 9.48 to 3.91, P>0.05) and a decrease in oxidative stress level (P< 0.05). The improvement in insulin resistance correlate with the change of oxidative stress (R^2 = 0.36 P = 0.011). Three months after surgery, hemoglobin A1C, insulin, and HOMA-IR continued to decrease (6.05, 7.11, and 1.92, respectively, P<0.05), where hemoglobin A1C correlated to weight loss (P<0.05). Sirt1- a significant reduction 3 months after surgery. PGC1-α- expression increased significantly after one week. Cox 2 expression a significant reduction 3 month after surgery. IL-6- demonstrated significant increase a week after surgery. Il-8 and MCP-1 demonstrated a significant reduction 3 months after surgery.

Conclusions: LSG is associated with marked antidiabetic effects 1 week after surgery, unrelated to weight loss. The antidiabetic effect improves at 3 months. The increase in IL-6 and in the expression of PGC1a after one week, and the decrease in oxidative stress, may suggest a short-term mechanism for an increased glucose uptake and insulin sensitivity.

How to Overcome Nutritional Complications Post Bariatric Surgery?

Daniyah A AlKhawtani

Prince Sultan Military Medical City, Saudi Arabia

Abstract

The prevalence of obesity has increased dramatically worldwide associated with high morbidity, mortality and treatment costs, over the past 3 decades. Saudi Arabia has become one of the top countries with high obesity rates. Currently Bariatric surgery is considered the most effective treatment for morbid obese patients with multiple comorbidities. It is associated with a 42% reduction of the cardiovascular risk and 30% reduction of all-cause mortality. Sleeve gastrectomy is the most frequently performed surgery in the USA/Canada and Asia and second to Roux-en-Y gastric bypass in the Europe and South America regions. Following bariatric surgeries, the anatomy and physiology of the gastrointestinal tract will be changed; this alteration makes patients more susceptible to developing surgical and nutritional complications. Nutritional complications include nausea, vomiting, diarrhea, constipation, gastroesophageal reflux disease, gout, dumping syndrome, reactive hypoglycemia, kidney stones and macro- and micro-nutrients deficiencies. Protein malnutrition is considered the most common macronutrient deficiency after surgery. In addition, micronutrient deficiencies may include: Iron 33-55%; calcium/vitamin D 24-60%, vitamin B12 24-70%, copper 10-15%; thiamine, <5%. Besides, gastrointestinal symptoms are very common after bariatric surgery. however, proper nutritional intervention can effectively manage the gastrointestinal symptoms after bariatric surgeries. Recently, several trials have been conducted to optimize long-term post-surgery success and prevent gastrointestinal complications by life-long nutritional and biochemical monitoring with the administration of multivitamins and mineral supplements according to the patient's needs. The aim of this lecture to identify how to overcome nutritional complications post bariatric surgery?

Session 3: New Directions in Obesity Treatment; Obesity Prevention and Control

Defining Obesity as a Risk Factor for Cardiovascular Disease in Different Ethnic Groups, the Suriname Health Study

Ingrid S.K. Krishnadath[1*], Jerry R. Toelsie[2], LennyNahar-van Venrooij[1], Albert Hofman[3] and Vincent W.V. Jaddoe[3,4]

[1]Department of Public Health, Faculty of Medical Sciences, Anton de Kom University of Suriname, Paramaribo, Suriname
[2]Department of Physiology, Faculty of Medical Sciences, Anton de Kom University of Suriname, Paramaribo, Suriname
[3]Department of Epidemiology, Erasmus MC, University Medical Center, Rotterdam, The Netherlands
[4]Department of Pediatrics, Erasmus MC, University Medical Center, Rotterdam, The Netherlands

Abstract

Background: Sex-specific body mass index (BMI) and waist circumference (WC) cut-off values have been validated for a limited number of ethnic groups. We aimed to derive these cut-off values for Amerindians, Creoles, Hindustani, Javanese, Maroons and Mixed living in Suriname.

Methods: We used data from 5,033 individuals aged 20 to 65, in the Suriname Health Study. We used Receiver Operating Curves (ROC) to derive optimal cut-off values for BMI and WC for the prediction of hypertension, diabetes and an adverse cardio-metabolic profile and compared these with WHO recommended values.

Results: The area under the ROC curve was consistently higher for WC compared to BMI among Creoles, Hindustani, Maroons and Mixed. The BMI cut-off values ranged from 24.8 kg/m^2 for Creole men and 26.9 kg/m^2 for Maroon women to 28.4 kg/m^2 and 30.8 kg/m^2 for Amerindian men and women, respectively. The WC cut-off values ranged from 81.0 cm for Maroon men and 86.9 cm for Javanese women to 96.8 cm for Hindustani men and 94.9 cm Amerindian women. Optimal BMI cut-off values approximated Asian cut-off values from the World Health Organization whilst those of WC for men approximated and for women exceeded cut-off values from the International Diabetes Federation.

Conclusion: In most ethnic groups, we found better discriminatory power for WC compared to BMI in the relation with cardiovascular risk factors. The estimated BMI and WC cut-off values were different between ethnic groups. Further studies are needed to identify cut-off values related to the future risk of cardiovascular disease and mortality.

The Good Food Revolution: Addressing Food Insecurity and Healthy Food Access in High Poverty Communities in the Mississippi Delta, USA

Leslie Hossfeld

Clemson University, College of Behavioral, Social and Health Sciences, Clemson, South Carolina USA

Abstract

The Mississippi Delta represents one of the greatest concentrations of rural persistent poverty in the United States. High unemployment, high food insecurity, higher rates of obesity and diabetes, and low access to healthy, affordable food characterize much of the 18 counties in the region. In the face of this, The Good Food Revolution, a community-based program to address food related health and thereby employment, developed in response to significant need in three small communities in North Bolivar County, Mississippi, bringing together community members, public and private sector organizations, researchers and students. This paper examines the process of community-engaged scholarship from the theoretical lens on building community capacity and resiliency developed by Chaskin (2001 and 2008). Increasing community capacity for all participants in the Good Food Revolution project through community-engaged scholarship has built resilient, healthy communities that seek to address their health needs through local food systems development.

Overweight Up to Obesity is a Healable Infectious Disease

Peter von Seck

Specialist in Internal Medicine I. R., Germany

Abstract

Weight gain is a worldwide health issue that affects life expectancy and happiness in a tortuous and long-lasting way.

Regularly diets are followed by the Yo-Yo-Effect. Enduring weight loss can only be achieved by learning to chew longer so the body has time to signal to the brain that it is full. This signal that a person has enough comes after 20-25 minutes, and people who eat too fast end to overeat the signal. After a process of app. 4-6 weeks learning to eat slowly by chewing often the healing has begun. After healing it is followed by an apparently livelong immunity without recurrence (very strong study results).

This easy way back to our inborn instinct released microbiome, organize the biological optimal bodyweight.

Observation, studies lead to the only one result: The regained origin microbiome take over command what we eat. The nature given microbiome organize the optimal energy balance. We eat what our body needs, and we stop when microbiome signals full. We enjoy the concert of aromas, which is developed by chewing often. We are happy when loosing pounds and old loved clothes fit again and we are lucky to regain energy to play football with our grandchildren.

Prof. Dr. Caroline Schmidt-Lucke, Charité Berlin, supported me with the scientific realization of my experiences and ideas.

High Stress Workplace Environment and Obesity Epidemic: Work as Cause and the Remedy

Pouran D Faghri

University of Connecticut, USA

Abstract

Working conditions impact a person's physical, mental and social well-being. The risk of obesity may increase for people in high demand, low-control work environments, and for those who work long hours. Physical, psychosocial and emotional stress and strain and the pressure and demands of work may encourage unhealthy behaviour and affect employees' eating habits, sleep and physical activity patterns. Evidently, workers' well-being and workplace health are related and should not be examined

separately. Integration of health protection addressing occupational physical and psychosocial risks with health promotion that encourage individual behaviour change to reduce the risk of obesity need attention. This presentation will (i) examine the role of workplace environment as both a contributor of obesity and a potential remedy for treating obesity, (ii) offer results from an integrated obesity intervention program using a participatory approach, and (iii) discuss the important role workplace can play in creating a "culture of health" at the workplace by providing workers with the knowledge and skills necessary to engage in healthy behaviour, while addressing the issues underlying physical and psychosocial workplace stressors.

Compared to What? Is BMI Associated with Histopathological Changes in Laparoscopic Sleeve Gastrectomy (LSG) Specimens?

Tamer Saafan

Hamad Medical Corporation, Qatar

Abstract

Background: Obesity is a risk for many different cancers. Laparoscopic sleeve gastrectomy (LSG) is common, and benign or pre-malignant histopathology types are reported in the removed gastric specimens. We assessed whether higher BMI was associated with certain benign or pre-malignant histopathological changes.

Method: Retrospective chart review of all primary LSG patients (N =1555). Demographic, clinical and LSG histopathology data were retrieved. BMI of patients with specific benign or pre-malignant conditions in their gastric specimens was compared with BMI of rest of the patients with abnormal histopathology's specimens, and also compared with BMI of patients with normal control specimens.

Results: females comprised 70% of the patients. Mean BMI were 46.3 (females) and 48 (males). Normal LSG specimens comprised 52%. Most common abnormal histopathology's were chronic inactive gastritis (33%), chronic active gastritis (6.8%), follicular gastritis (2.7%), lymphoid aggregates (2.2%), intestinal metaplasia (1.4%) and GIST (0.7%). After controlling for confounders (age, gender, H. Pylori, Diabetes Mellitus type 2, hypertension), no significant association was observed between BMI of patients with specific benign or pre-malignant histopathology compared with BMI of the rest of the patients with abnormal histopathology's and compared to BMI of patients with normal histopathology's.

Conclusion: When confounders were taken into account, there appeared no significant associations between BMI of patients with specific benign or pre-malignant histopathology compared with BMI of the rest of the patients with abnormal histopathology's and compared to BMI of patients with normal histopathology's of their gastric specimens. There was a very weak correlation between BMI and other covariates.

The Morbidity Crisis in Canadian Long-haul Truck Drivers: A Neglected Population

Alexander M. Crizzle[1*], Gordon A. Zello[2], Jennifer Malkin[1] and Maryam Madani Larijani[1]

[1]School of Public Health, University of Saskatchewan, Canada
[2]School of Pharmacy and Nutrition, University of Saskatchewan, Canada

Abstract:

Background: There are over 300,000 long-haul truck drivers (LHTD) in Canada despite a current driver shortage. One reason for the shortage is the poor health and wellness of LHTD due to a myriad of dietary and environmental factors that increase their risks for non-communicable diseases (NCDs) such as obesity, hypertension, diabetes and cardiovascular related diseases. The primary objective of our study was to determine the prevalence rates of NCDs in LHTD and to profile how the environment and job-related factors influence NCD rates in this population.

Methods: A nutritional assessment (NA) and surveys were completed by 206 LHTD across 7 truck stops. NA included objective physical (i.e. anthropometry, grip-strength), body composition (i.e. bio-impedance), blood pressure (BP) measurements, and dietary recalls. Survey data on the food environment, work conditions, and injuries (crashes and other injuries) were collected.

Results: The majority of LHTD (>50%) were classified as overweight (BMI 25-29.9) or obese (BMI >30) and BP measurements were higher than normal. Many truck drivers had high body fat (>30%). Dietary intake/patterns were determined to be of poor quality with little variety and consumption of high-caloric, non-nutrient dense foods. Overall, most food/meals were purchased and not prepared by the drivers. Convenience, taste and preparation time were some of the reasons for food

choices.

Discussion: The dietary intake/patterns of these drivers are indicative of unhealthy practices resulting in high rates of overweight/obesity and BP. The food environment and lifestyle are contributing factors to drivers' health.

Gastric Bypass with Fundectomy and Gastric Remnant Exploration: A New Technique

E. Galfrascoli* and M.A. Zappa

Fatebenefratelli Hospital, Milan, Italy

Abstract

Obesity is one of the most important public health conditions worldwide and Bariatric surgery is an effective treatment that results in the improvement and remission of many obesity-related comorbidities, as well as providing sustained weight loss and improvement in quality of life. The number of procedures performed worldwide is increasing over the last years and the RYGB remains the most important technique.

Nevertheless, this procedure has two major disadvantages: difficult exploration of excluded stomach and inaccessibility of biliary tract with the problem of gastric remnant complications. In Literature case of Obstruction, Perforation, Bleeding and gastric cancer are presented. These complications even if rare, could be severe and lethal with the need of an early diagnosis.

To tackle these problems several authors have tried alternative methods to study the excluded portion of the stomach (double balloon endoscopy, virtual endoscopy, laparoscopic gastrostomy), but each is technically challenging, often unsuccessful or requires the patient to undergo surgery and is therefore performed only in case of necessity, in any case, those are never carried out at an early point in time.

Authors address the problem by proposing a new gastric bypass technique: the laparoscopic gastric bypass with fundectomy and stomach exploration (LRYGBfse). This procedure has been demonstrated to be safe and effective with durable results at 5 years follow up retaining all the benefit of the gastric bypass with the major advantages of an easy access to the excluded stomach and the biliary tract.

Emotional Problems and Health Related Quality of Life in Adolescents with Obesity: Ethnic Aspects

Ljubov Rychkova[1], Ariuna Kosovtseva[1*], Anna Pogodina[1], Vladimir Polyakov[1] and Zhanna Ajurova[2]

[1]Scientific Centre for Family Health and Human Reproduction, Russia
[2]Kurumkan Central District Hospital, Republic of Buryatia, Russia

Abstract

Background: Psychological state and health related quality of life (HRQL) are important criteria for the complex effect of obesity on children and the basis for weight loss motivation. Adolescents of different ethnicity have specific psychological patterns.

Objective: Our aim was to identify association between emotional problems and HRQL in Asian and Slavic adolescents with obesity.

Methods: Our research included 256 adolescents (14,04 ± 1,82 years): 146 Asian (39 with obesity - body mass index (BMI) > 95th percentile and 107 normal BMI) and 110 Slavic (28 - with obesity; 82 – with normal BMI) ethnic groups. We measured anthropometry and performed psychological examination including PedsQL™ 4.0 (for assessing HRQL scores), The State-Trait Anxiety Inventory, Buss-Durkee Hostility Inventory, Personality inventory "Mini-SMIL".

Results: Association between psychological parameters and HRQL in healthy Asian and Slavic adolescents is adequate: Anxiety, Depression and Irritability increase is accompanied by a decrease in all domains of HRQL (physical, emotional, psychosocial). This relationship is inadequate in Asian individuals with obesity: Irritability growth is accompanied by an increase in all HRQL domains. The HRQL assessment in Slavic adolescents has similar tendency: accumulation of internal motivational aggression is associated with the HRQL increase in "School Functioning" domain.

Conclusion: Obese adolescents of different ethnicity have inadequate and specific to Asian and Slavic ethnic groups association between HRQL and emotional problems. If emotional difficulties are a barrier to having treatment and motivation

to weight loss, then psychological interventions should follow for individuals with different ethnicity.

Relationships Between Serum Vitamin D Levels and Metabolic Syndrome Markers in Post-Menopausal Women from Colombian Caribbean

Jimmy E. Becerra*, José Armando Angarita Ruidiaz, Héctor Fernando Suarez Dávila, Alfonso Suarez Rodríguez, Roberto C. Rebolledo-Cobos, Norella M. Ortega, and Luz Adriana Sarmiento-Rubiano

Metropolitana University, Barranquilla – Colombia, Colombia

Abstract

Background: Previous evidence suggest that metabolic disorders in postmenopausal women could be related with low serum vitamin D levels. For example, vitamin D deficiency has been associated with increased risk factors for cardiovascular disease (CVD), mainly those related with metabolic syndrome.

Objective: To assess the relationship between the serum vitamin D (25-OH-D) levels and the metabolic syndrome markers in postmenopausal women.

Methods: This descriptive and cross-sectional study was conducted in 183 postmenopausal women of four municipalities from Colombian Caribbean. The serum 25-OH-D levels and the anthropometric and biochemical markers were assessed and correlated with metabolic syndrome.

Results: The average value of serum vitamin D (25-OH-D) was 26,34 ± 9,08 ng/mL, and 69,95% of the women had vitamin D levels <30 ng/mL, of which 43,72% were with insufficiency (>20 to <30 ng/mL) and 26,23% with deficiency (<20 ng/mL). Of the evaluated women, the 81,42% showed to have metabolic syndrome, however only one significant positive association was observed between the HDL cholesterol and the 25-OH-D levels (p=0.014).

Conclusion: In the evaluated population in this study, vitamin D deficiency is related with low HDL cholesterol levels. It is necessary to generate programs of vitamin D supplementation and promotion of healthy lifestyles that improve the vitamin D levels in post-menopausal women.

Outcome of Single-Anastomosis Duodenoileal Bypass as a Revisional Procedure for Weight Regain After Sleeve Gastrectomy

Tamer Saafan

Hamad Medical Corporation, Qatar

Abstract

Background: Single-anastomosis duodenoileal bypass with sleeve gastrectomy (SADI-S), as one-step or two-step, is an evolving procedure, with variation in literature regarding its technique, post-operative complications, weight and metabolic profile and resolution of comorbidities. To the best of our knowledge, this is the first study from the Middle East and Asia continent assessing the efficacy of single-anastomosis duodenoileal bypass as revisional procedure for weight regain after LSG.

Methods: A retrospective analysis of all patients who had single anastomosis duodenoileal bypass (SADI) as a revisional procedure for weight regain after LSG. Comparisons were done to evaluate weight loss, metabolic profile and resolution of comorbidities, before and after SADI , at one year follow-up. Post-operative complications were assessed as well.

Results: 42 patients were assessed. Mean age and BMI before SADI were 38 and 43.7, respectively. Excess weight loss percentage and total weight loss percentage were 53.0% and 21.4%, respectively. Abnormal Albumin, HBA1C, cholesterol and LDL values were significantly improved. Upon one year follow up, we had 7 cases of steatorrhea, one case of abdominal collection, one case of nutritional deficiency and zero cases of leak, ileus, volvulus, internal hernia, dysphagia, ulcer, strictures, bile reflux, bowel obstruction, De novo GERD and wound infection. Revisional procedure was not needed for any patient and our mortality rate was zero. Among patients with diabetes mellitus, hypertension and GERD, 50% resolution of these comorbidities were noted.

Conclusion: SADI is an effective revisional procedure for weight regain after LSG with promising outcome.

The Relationship Between Exposure to Bisphenols and Phthalates and Obesity in Adolescence

Joseph Apau[1*], Simon K. Appiah[2] and Eric Adua[3]

[1]*Department of Chemistry, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana*
[2]*Department of Mathematics, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana*
[3]*Medical and Health Sciences, Edith Cowan University, ECU, Perth, Australia*

Abstract:

Exposure to endocrine disruptors such as bisphenols (BPs) and phthalate metabolites in early life may contribute to obesity epidemic. Bisphenol A (BPA) is one BPs that is widely used as a monomer in the industry to manufacture plastics, however, because of health concerns, it has largely been replaced by bisphenol F (BPF), bisphenol S (BPS) and this has resulted in an increase in the production of BPF and BPS over the last few decades. Phthalates are used in industry as plasticizers to increase softness, flexibility, elongation and durability of rigid polymers such as polyvinyl chloride (PVC); and is estimated that about 40% of all industrially produced consumer products contain phthalates. Phthalates are present in most plastics; however, they are not stable and over time leach from the plastics. Bisphenols and phthalates are man-made chemicals found in lots of household products. Some of the products you can find them in are; packaging, such as food and drink containers, lotions, toys, plastic PVC flooring and water pipes. Bisphenols and phthalates are present in plastics and resins for food packaging; are all-over in the environment and in biological samples. They are linked to serious adverse health outcomes in human, including cardiovascular disease, abnormal sperm morphology/sperm DNA damage, autistic-like child behaviour, miscarriage, earlier puberty, diabetes and obesity.

Exploration of Successful Weight Management Over the Life Course of Adults in Finland: A Qualitative Study

Anu Joki[1*], Johanna Mäkelä[2], Hanna Konttinen[3] and Mikael Fogelholm[1]

[1]*University of Helsinki, Department of Food and Nutrition, Finland*
[2]*University of Helsinki, Department of Education, Finland*
[3]*University of Helsinki, Department of Sociology, Finland*

Abstract

The current obesogenic environment challenges weight management. However, some people succeed in maintaining a normal weight. This study explored lifelong weight management from the life course perspective. We aimed to gain an insight into the issues related to normal weight individuals' pathways from childhood to adulthood and how their experiences and social connections influence their weight management.

We approached the research topic with qualitative methods. Two age groups (30–45; 55–70 years, men and women), forming a total of 39 individuals, participated in theme interviews. Content analysis found two main categories: (1) adoption of lifestyle and (2) maintenance of lifestyle.

Childhood family played a central role in the formation of lifestyle: food-upbringing created the basis for the interviewees' current diet, and their live had always been characterized by an active lifestyle. High perceived self-efficacy was vital in weight management. The interviewees were confident about their routines and trusted their capabilities to recognize and handle situations that threatened their lifestyles. They possessed skills for adjusting their lifestyle to altered environments. The interviewees also highlighted the importance of habits in weight management. They had improved their adopted lifestyle through constant learning. New routines became more internalized through active repetition, finally turning into habitual practices.

Based on interviews, we conclude that childhood was important in the development of the health-promoting lifestyle of our interviewees. However, weight management was described as a journey over the life course, and success also encouraged skills for identifying risks and adjusting actions to cope with challenging situations.

Session 4: Obesity Epidemiology and Therapies for Obesity

Prevalence of Target Organ Damage on Different Steps of the Cardiometabolic Continuum

E. Zheleznova[1*], Y. Zhernakova[1], N. Blinova[1], E. Elfimova[1], M. Azimova[1], I. Trubacheva[2], V. Kaveshnikov[2], V. Serebryakova[2], E. Yarovaya[1], A. Rogoza[1], E. Oshchepkova[1], and I. Chazova[1]

[1]National medical research center of cardiology, Moscow, Russia
[2]Tomsk National Research Medical Center of the Russian Academy of Sciences, Tomsk, Russia

Abstract:

Objective: To assess the prevalence of target organ damage on different steps of the cardiometabolic continuum (abdominal obesity (AO), metabolic syndrome (MS), diabetes mellitus (DM)). The data from the sub-study of a multicenter observational study ESSE-RF.

Design and Method: In the study were included 1538 participants (men - 641 (42%)), aged 25-64 years, from the unorganized population of Tomsk (Western Siberia).

Anthropometric measurements; lipids levels, fasting glucose, HOMA-IR, GFR MDRD; ECG, carotid artery TIM and plaque were performed in all participants. AO was defined by waist circumference (WC) cut-off > 80 cm in women and > 94 cm in men. MS was identified with IDF 2005 criteria.

All participants were divided into 4 groups: 1st-control (n = 356, age 32,5 ± 12,8, BMI 23,4 ± 3,4, WC 78,6 ± 9,1), 2nd - AO without MS (n = 107, age 42,1, ± 10,1, BMI 28,5, ± 4,5, WC 93,5 ± 9,6), 3rd — MS (n = 676, age 51,0 ± 9,9, BMI 30,5 ± 4,9, WC 98,6 ± 11,3),4th-DM (n = 144, age 55,9 ± 8,0, BMI 32,3 ± 5,5, WC 102,5 ± 13,2).

Results: The highest prevalence of TOD was detected in group 4th. Although TOD was present already in the group 2 (AO).

	Reduction GFR,%	Left ventricular hypertrophy,%	Increase TIM,%	Atherosclerotic plaque,%
1st	0	0,31	0	5,45
2nd	1,37*	2,74*	12,3*	21,9*
3rd	3,74**	4,73**	14,6**	33,4**
4th	6,67***	17,5***	30,0***	35,0***

p *1st and 2nd, **2nd and 3rd,***3rd and 4th (p≤0,001)

Conclusion: Prevalence of target organ damage, detected already at the AO stage, progressively increase from group to group. The differences in the target organ damage frequency in all groups were statistically significant (p <0.01).

Quality of Life in Obesity and Bariatric Surgery

Ronette L. Kolotkin

Quality of Life Consulting, Durham, NC, USA
Department of Community and Family Medicine, Duke University School of Medicine, Durham, NC, USA
Western Norway University of Applied Sciences, Førde, Norway
Centre of Health Research, Førde Hospital Trust, Førde, Norway
Morbid Obesity Centre, Vestfold Hospital Trust, Tønsberg, Norway

Abstract

Aim: To examine factors that influence quality of life (QOL) in persons with obesity and the different methods of assessing QOL, with particular emphasis on results of a 12-year, prospective study.

Methods: Through literature review, including a systematic review of reviews, what is known about QOL in obesity is reported. In addition, 12-year changes in QOL are described in a study of gastric bypass patients (Surgery Group; n = 418) compared to two non-surgical groups: Nonsurgery Group 1 (n = 417) individuals who sought but did not have surgery; Nonsurgery Group 2 (n = 321) individuals who had severe obesity but did not seek surgery.

Results: A large number of sociodemographic, medical, and psychological factors influence QOL. In the 12-year study, the Surgery Group showed greatly improved, statistically significant weight-related and physical QOL from baseline, and differences between the Surgery Group and both non-surgery groups were significant. QOL scores peaked at 2 years, followed by declines from 2-6 and 6-12 years. Small improvements in mental/psychosocial aspects of QOL in the Surgery Group at 2 years were not maintained at either 6 or 12 year.

Conclusions: Quality of life is influenced by numerous, diverse factors. Not all persons with obesity are equally affected. Quality of life improves with bariatric surgery, particularly in the physical and weight-related areas. Despite some decline in QOL scores from the peak at two years, the magnitude of improvement supports the clinical relevance of bariatric surgery for enhancing patients' quality of life.

Epidemiological Characteristics of Overweight and Obesity Among School Children Aged 7-17 Years of Age in Jiangsu Province

Xiyan Zhang[1,2*], Wenyi Yang[1,2+], Jie Yang[1,2], Yan Wang[1,2], Weina Liu[1,2], Liuwei Gao[1,2,3], Fengyun Zhang[1,2*] and Yonglin Zhou[1,2]

[1]Department of Child and Adolescent Health Promotion, Jiangsu Provincial Center for Disease Control and Prevention, China
[2]Public Health Research Institute of Jiangsu Province, China
[3]School of public health, Southeast University, China

Abstract

Objective: Previously, we have presented the prevalence of overweight and obesity among primary school-aged children from 2014 to 2017, and for this time we aimed to give a deep description on epidemiological characteristics of overweight and obesity among school children aged 7-17 years of age in Jiangsu Province from 2017 to 2018.

Methods: Physical examination and questionnaire investigation among children aged 7 to 17 years were conducted since 2017, and all thirteen cities in Jiangsu Province were enrolled in this study including 29,089 students.

Results: The prevalence of overweight and obesity among students aged 7 to 17 were 15.6% (95% CI: 15.0%-16.2%) for female students and 19.3% (95% CI:18.6%-19.9%) for male students, and 10.4% (95% CI: 9.9%-10.9%) for female students and 16.6% (95% CI: 16.0%-17.2%) for male students. In multivariate analysis we found that obesity group are more likely from urban cities (RR: 1.26, 1.13-1.41), extended families (RR: 0.86, 0.74-0.99) and cesarean deliver (RR; 0.81, 0.73-0.91), had higher blood pressure and value of BMI (RR: 1.03, 1.02-1.03). Dietary and behavior pattern also had impact on childhood obesity.

Conclusion: In Jiangsu Province the prevalence of combined overweight and obesity still maintained a high level. Region, family type, BMI, deliver mode and so on might contribute to childhood overweight and obesity, and targeted policies and interventions should be implemented.

Aldosterone Levels, Metabolic Phenotype and Subclinical Left Ventricular Remodeling in Obesity

Branislava Ilincic[1*], Edita Stokic[1], Anastazija Stojsic [2], Veljko Crnobrnja[1], Sonja Slankamenac[1], Stanislava Nikolić [1] and Velibor Cabarkapa[1]

[1]Clinical Center of Vojvodina, Faculty of Medicine, University of Novi Sad, Novi Sad, Serbia
[2]Institute for cardiovascular diseases - Sremska Kamenica, Faculty of Medicine, University of Novi Sad, Novi Sad, Serbia

Abstract

Background and Aims: Aldosterone levels and metabolic health are implicated in cardiac remodeling. We examined the patterns of left ventricular (LV) structural remodeling in obese non-diabetic subjects without co-morbidities and evaluated the association between LV patterns and aldosterone levels in different metabolic health categories.

Method: Seventy obese [body mass index (BMI) ≥25 kg/m2, mean age 38 ± 7.2 years, 65% women] non-diabetic individuals were categorized according to the metabolic health: metabolically healthy obese (MHO, ≤2 positive metabolic parameters) and metabolically unhealthy obese (MUHO). Metabolic parameters [homeostasis model assessment-insulin resistance (HOMA-IR) index, triglycerides (TG), high density lipoprotein-cholesterol (HDL-C)], systolic blood pressure (SBP) or diastolic blood pressure (DBP), plasma aldosterone level (CLIA; DiaSorin) and two-dimensional and Doppler echocardiography (GE, Vivid 9, 2.5 MHz transducer) were assessed in all subjects.

Results: Among subjects, 36% had MHO phenotype, in 65% of MHO subjects associated with concentric LV remodeling. In subjects with MNHO, concentric LV hypertrophy was present in 17% of subjects and concentric LV remodeling in 46% of subjects. No eccentric pattern of LV hypertrophy was found, and no significant differences were observed between the groups (MHO vs. MNHO) regarding plasma aldosterone concentration (137.08 +/- 66.92 vs. 126.63 +/- 78.63 pg/mL, p>0.05). In the linear regression analysis, aldosterone concentration was significantly positively associated with concentric LV remodeling (β = 0.31, p = 0.02). No correlation was found between aldosterone concentration and metabolic parameters.

Conclusion: Subclinical left ventricular remodeling and dysfunction of aldosterone activity may commonly be present in obese subjects regardless of metabolic phenotype.

Keywords: Obesity, Subclinical left ventricular remodeling, Aldosterone, Metabolic health

Supraglottic Jet Oxygenation and Ventilation (SJOV) for Obese Patients Receiving Hysteroscopy Under Intravenous Anesthesia: A Randomized Controlled Clinical Trial

Hansheng Liang[1], Yuantao Hou[1], Liang Sun[1], Qing-yue Li[1], Huafeng Wei[2*] and Yi Feng[1]

[1]Department of Anesthesiology, Peking University People's Hospital, Beijing100044, Beijing, China
[2]Department of Anesthesiology and Critical Care, Hospital of the University of Pennsylvania, Philadelphia 19104, Pennsylvania, USA

Abstract

Background: Supraglottic jet oxygenation and ventilation (SJOV) can effectively maintain adequate oxygenation in patients with respiratory depression, even in apnea patients. However, there have been no randomized controlled clinical trials of SJOV in obese patients. This study investigated the efficacy and safety of SJOV using WEI Nasal Jet tube (WNJ) for obese patients who underwent hysteroscopy under intravenous anesthesia without endotracheal intubation.

Methods: A single-center, prospective, randomized controlled study was conducted. The obese patients receiving hysteroscopy under intravenous anesthesia were randomly divided into three groups: Control group maintaining oxygen supply via face masks (100% oxygen, flow at 6L/min), the WNJ Oxygen Group with WNJ (100% oxygen, flow: 6L/min) and the WNJ SJOV Group with SJOV via WNJ (Jet ventilator working parameters:100% oxygen supply, driving pressure (DP) 0.1MPa, respiratory rate (RR) 15bpm, I/E; ratio 1:1.5). SpO_2, $P_{ET}CO_2$, BP, HR, ECG and BIS were continuously monitored during anesthesia. Two-Diameter Method was deployed to measure cross sectional area of the gastric antrum (CSA-GA) by ultrasound before and after SJOV in the WNJ SJOV Group. Episodes of SpO_2 less than 95%, $P_{ET}CO_2$ less than 10 mmHg, depth of WNJ placement and measured CSA-GA before and after jet ventilation in the WNJ SJOV Group during the operation were recorded. The other adverse events were collected as well.

Results: A total of 102 patients were enrolled, with two patients excluded. Demographic characteristics were similar among the three groups. Compared with the Control Group, the use of SJOV via WNJ significantly improved ventilation (the incidence of $P_{ET}CO_2$ <10 mmHg changing from 36% to 9% (P = 0.009), and oxygenation (the incidence of SpO_2 < 95% changing from 33% to 6% (P = 0.006)), reduced the remedial intervention rate (the application rate of jaw-lift changing from 33% to 3% (P = 0.001)), and decreased the total percentage of adverse events from 36 % to 12% (P = 0.004). Compared with the WNJ Oxygen Group, the use of SJOV via WNJ significantly decreased episodes of SpO_2 < 95% from 27% to 6% (P = 0.023), $P_{ET}CO_2$ < 10 mmHg from 33% to 9% (P = 0.017), respectively. Depth of WNJ placement was about 12.34 cm in WNJ SJOV Group. There was no significantly difference of CSA-GA before and after SJOV in the WNJ SJOV Group (P = 0.234). There were no obvious cases of nasal bleeding in three groups.

Conclusions: SJOV can effectively and safely maintain adequate oxygenation in obese patients under intravenous anesthesia without intubation during hysteroscopy. This efficient oxygenation may be mainly attributed to supplies of high concentration oxygenation to the supraglottic area, and the high-pressure jet pulse providing effective ventilation. although the nasal airway tube supporting collapsed airway by WNJ also plays a role. SJOV doesn't seem to increase gastric distension and the risk of aspiration. SJOV can improve the safety of surgery by reducing the incidence of the intraoperative involuntary limbs swing, hip twist and cough.

Session 5: Weight Management

Health Economic Challenges in Obesity Evaluation

Mark Nuijten

L A2M, Amsterdam, The Netherlands, ITU, Istanbul, Turkey

Abstract

Background: The role of nutritional intervention in obesity to optimize the use of scarce resources is therefore of interest for healthcare decision makers. In health economics, an analysis of the costs and effects of a healthcare technology by means of a cost-effectiveness analysis has become an established tool for reimbursement decisions for innovative medicines. However, standard health economic techniques cannot be always applied to assess the cost-effectiveness of nutritional intervention in obesity.

Objective: The objective is to present specific methodological issues for health economic assessment of nutritional interventions in obesity.

Methods: Many different comparative treatments exist for management of obesity in daily practice (surgery, diet, drug therapy, physical exercise and lifestyle), which do not always have sufficient clinical evidence from RCTs. There is a parallel between extrapolation of intermediate outcomes to long-term outcomes in cost-effectiveness analyses for pharmaceutical or nutrition, as long as the clinical evidence for nutrition fulfils the requirements for pharmaceuticals. However, in nutrition the evidence may not always come from RCTs but may be based on observational data. Therefore, the clinical evidence of nutrition in itself is not the issue but handling of clinical evidence from non-RCT studies. Finally, the impact of selection bias and confounding effects is much larger in obesity because of heterogeneous patient populations.

Conclusion: To correspond to the complexity of the health economic assessment of nutritionals in obesity, there is a need to generate adapted methodologies and guidance in order to correctly express the impact of nutrition in obesity in health economic values.

Modifications of Negative Attitudes Toward Obesity in Pre-Professionals of Exercise Sciences

Edda Lorenzo – Bertheau[1*], Francisco Cruz – Quintana[2], Athanasios Pappous[3], Yahira Barranco – Ruiz[1] and Jacqueline Schmidt – RioValle[2]

[1]*Universidad Nacional de Chimborazo, Ecuador*
[2]*Universidad de Granada, España*
[3]*Escuela de Deporte y Ciencias del Ejercicio de la Universidad de Kent, Reino Unido*

Abstract

Objetives: To investigate the effect of short intervention programs for changing negative attitudes towards obesity through strategies of intergroup contact in pre-professionals of exercise sciences and determine the most effective strategy.

Methods: A total of 56 students (23.95 ± 4.70-years; 75% male) Ecuadorian universities participated in this study. The body mass index was normal (22.5 ± 1.75). The sample was divided randomly into a control group (C: without intervention, n = 14) and three experimental groups with interventions intergroup contact (CD: Contact-Direct, n = 14, CI: Contact-Imagined, n = 13 and CTP: Contact-Take-Perspectives, n = 15). Participants were assessed before and after interventions through the AFA (Antifact Attitudes Questionnaire) for explicit attitudes toward obesity in three dimensions (aversion, fear of gaining weight and unwillingness) and the IAT (Implicit Association questionnaire Antifaz, electronic version) by measuring implicit attitudes form. Statistical comparisons between groups before and after the interventions were analyzed using the Mann-Whitney U for the AFA and Chi square for the IAT. The value of significance was $p < 0.05$.

Result: The AFA revealed that the implementation of intervention programs fell short attitudes toward obesity with significant differences among all groups in aversion subscale ($p = 0.06$) and unwillingness ($p = 0.007$). In addition, it was observed that the CD group showed the lowest average ranges while the C group showed the highest average for both subscales range. Negative towards obesity through the IAT measure implicit attitudes decreased significantly more participants in the case of CD group ($x^2 = 0.04$). Group C showed the smallest decrease compared to other study groups.

Conclusions: Social psychology programs short intervention and in particular by direct contact programs can modify the implicit and explicit against obesity in pre-professionals of exercise sciences negative attitudes. Therefore, they could be included in the process of training them to avoid discrimination and improve the quality of professional practice.

Gut Microbiota and Overweight/Obesity in Infancy: Evidence from the Wuhan Twin Birth Cohort Study

Hong Mei*, Shaoping Yang, An'na Peng and Yafei Tan

Wuhan Children's Hospital (Wuhan Maternal and Child Healthcare Hospital), Tongji Medical College, Huazhong University of Science & Technology, Wuhan, China

Abstract

Objectives: There is an increasing evidence that obesity is linked with the dysbioses of gut microbiota. However, it's unclear whether these microbial changes precede disease onset. Twin cohorts present a unique genetically-controlled opportunity to study the relationships between lifestyle factors and the microbiome. In this study, we hypothesized that changes in microbial composition could be either causal or early biomarkers of progression in infancy obesity.

Methods: Stool samples at 1st and 6th months old were collected from 12 families with one normal weight and one overweight/obesity twin at 6 months old. The gut microbiota composition was assessed by sequencing the 16S rRNA gene. All the analyses of microbiota were at genus level.

Results: Among the 12 families investigated, 6 families had monozygotic twins. No significant difference of microbiota communities between monozygotic and dizygotic twins. Compared to the 6th months old ones, the abundance of microbiota was higher, and the diversity was lower in the 1st month old twins. Results from metastats analysis shown that Bifidobacterium and Lachnospiracea *Incertae sedis* was higher at 6th months old, while *Veillonella*, Klebsiella, *Akkermansia*, Streptococcus, Staphylococcus were lower at 6th months old. No significant difference in microbiota community was found between overweight/obesity and normal weight twins at 1st month old, while difference existed at the 6th months old. A higher relative abundance of *Clostridium* sensu stricto was detected in the overweight/obesity group at the 6th months old.

Conclusion: Our findings indicted that the changes of stool microbiota during infancy may contribute to the overweight/obesity in infancy.

Effects of Vitamin D Supplementation on Septic Children: A Randomized, Double-Blinded, Controlled Trial

Yu Wang*, Zhongwen Yang, Li Gao and Qianhan Wang

People's Hospital of Henan Province, China

Abstract

Objectives: To assess the effects of vitamin D supplementation on vitamin D status and clinical outcomes in septic children with VDD.

Methods: Eligible septic children with VDD were assigned to take either 150,000 IU cholecalciferol or an identical placebo once within 24 hours after administration. Serum 25-hydroxyvitamin D (25OHD) concentrations were assessed at baseline and on day 5 after treatment. Meanwhile, cv-SOFA score were documented for every patient. The incidence of septic shock, duration of ventilation and mortality in PICU were examined subsequently.

Results: 109 participants fulfilled the study requirements, with 55 children for treatment group and 54 patients for control group respectively. The two groups were comparable in baseline characteristics. On day 5 after the treatment, the serum 25OHD levels in both two groups increased, but the treatment group (19.67 ± 7.5μg/l) was higher than the control group (15.62 ± 6.2μg/l) significantly ($p < 0.01$). In contrast to it, cv-SOFA score in the treatment group (1.76 ± 0.8) decreased evidently compared to the control group (2.3 ± 1.1) ($p < 0.01$). What's more, incidence of septic shock in the intervention group declined into 7.3%, which was lower than the control group (20.4%) ($p < 0.05$). On measurements of duration of ventilation and mortality, treatment group demonstrated improvements in these two parameters, but there was no significance between the two groups ($p > 0.05$). No vitamin d supplementation associated adverse event was found during the observation.

Conclusions: Vitamin D administration to septic children with VDD decreases cv-SOFA score and the incidence of septic shock.

The Influence of Maternal Dietary Patterns on Gestational Weight Gain: A Large Prospective Cohort Study in China

Xueling Wei [1,2,*], Jianrong He[1,2], Yan Lin[3], Minshan Lu[1,2], Qianling Zhou[1], Shenghui Li[1], Jinhua Lu[1,2], Mingyang Yuan[1,2], Niannian Chen[1,2], Lifang Zhang[1,2], Lan Qiu[1,2], Weibi Mai[4], Yonghong Pan[4], Caixin Yin[3], Cuiyue Hu[1], Huimin Xia[1] and Xiu Qiu[1,2]

[1] Division of Birth Cohort Study, Guangzhou Women and Children's Medical Center, Guangzhou Medical University, 9 Junsui Road, Tianhe District, Guangzhou 510623, Guangdong, China.
[2] Department of Woman and Child Health Care, Guangzhou Women and Children's Medical Center, Guangzhou Medical University, 9 Jinsui Road, Tianhe District, Guangzhou 510623, Guangdong, China.
[3] Nursing department, Guangzhou Women and Children's Medical Center, Guangzhou Medical University, 9 Jinsui Road, Tianhe District, Guangzhou 510623, Guangdong, China.
[4] Department of Obstetrics and Gynecology, Guangzhou Women and Children's Medical Center, Guangzhou Medical University, 9 Jinsui Road, Tianhe District, Guangzhou 510623, Guangdong, China.

Abstract

Objective: The relationship between dietary patterns and gestational weight gain (GWG) in different pregnancy stages has rarely been reported among the Asian population. The aim of this study was to examine the relationship between dietary patterns and GWG in Chinese pregnant women.

Research methods: Participants were women from the Born in Guangzhou Cohort Study who completed a validated food frequency questionnaire at 24 to 27 wk gestation (N = 5733). Dietary patterns were generated by cluster analysis. Maternal pregnancy weight was self-reported; weights during pregnancy were extracted from medical records. Regression analyses were performed to test the associations between dietary patterns and total GWG and GWG rates (linear regression), and the adequacy of GWG (logistic regression).

Results: According to food consumption frequency, six dietary patterns were generated: "richer in cereals," "richer in vegetables," "richer in meats," "richer in fruits," "richer in fish, beans, nuts, and yogurt," and "richer in milk and milk powder." Compared with women following the richer in cereals pattern, those who followed the richer in fruits pattern had a significantly higher GWG (b = 0.592; 95% confidence interval [CI], 0.1661.018) and total rate of GWG; those who followed the richer in fish, beans, nuts, and yogurt" pattern had a greater GWG rate in the second trimester, and also had a decreased risk for inadequate GWG (odds ratio, 0.797; 95% CI, 0.6380.997).

Conclusion: Consuming a variety of foods and frequent consumption of fruits during pregnancy contributes to a more rapid increase in GWG among pregnant women in China. Findings may be useful in pregnancy weight monitoring.

References

1. Wei X, He JR, Lin Y, Lu M, Zhou Q, et al. 2019. The influence of maternal dietary patterns on gestational weight gain: A large prospective cohort study in China. Nutrition 59: 90-95. https://doi.org/10.1016/j.nut.2018.07.113

Poster Presentations

Prevalence and Trends of Metabolic Syndrome in Clients of Health Advice Centres During 2003 - 2012 in Slovakia

Kvetoslava Rimarova[1*], Timea Ostrihonova[2], Janka Beresova[3] and Silvia Kontrosova[4]

[1]Department of Public Health and Hygiene, Faculty of Medicine, University of Pavol Jozef Šafárik, Košice, Slovak republic
[2]General Hospital, Rimavská Sobota, Slovak republic
[3]Regional Public Health Authority, Rimavská Sobota, Slovak republic
[4]Regional Public Health Authority, Banská Bystrica, Slovak republic

Abstract

Introduction: Metabolic syndrome arises from insulin resistance accompanied with abnormal adipose deposition and frequently from obesity. The aim of our cross-sectional time trends study was to characterize the prevalence of metabolic syndrome and its five risk determinants among the clients of Health Advice Centres of Regional Public Health Authorities in Slovakia during period - 2003 - 2012.

Material and Methods: Prevalence data were estimated in adults and children (≥10 years, N = 79 904) from the nationwide electronic database of Health Advice Centres of Regional Public Health Authorities in Slovak Republic "Test of healthy heart" from 2003 to 2012.

Results: The overall prevalence of metabolic syndrome was 30.2% in males and 26.6% in females, abdominal obesity was confirmed in 48.3% of the male population and 53.9% of females. Increased triglyceride level has higher prevalence among males (33.3%) compared to females (24.2%). Blood pressure (BP) values and fasting glucose values were significantly higher in the male population than females. We confirmed an increased trend in the age-adjusted prevalence of metabolic syndrome. Abdominal obesity and elevated triglycerides had also increased time trends prevalence in both sexes. The prevalence of people without risk determinants of metabolic syndrome had a time decreasing trend. A surprising finding is the decrease in the proportion of persons with suboptimal HDL-cholesterol.

Conclusion: The increasing prevalence of metabolic syndrome, abdominal obesity, and elevated triglycerides highlights the urgency of addressing these health problems as a healthcare priority to reduce cardiovascular mortality in the Slovak Republic.

Evaluation of the Tolerability and Efficacy of a Non-Competitive, Reversible Inhibitor of the A-amylase and A-Glucosidase Enzymes with a Specific, Sandardized Polyphenolic Composition on the Modulation of Postprandial Glycemic Peaks in Overweight Patients with Impaired Fasting Glucose

Federico Cioni[1] and Claudio Maioli[2*]

[1]Clinical Nutrition Clinic, Val Parma Hospital, Langhirano, Parma
[2]Department of Health Sciences - University of Milan, ASST Santi Paolo and Carlo, Milan, Italy

Abstract

The prevalence of impaired fasting glucose (IFG) in the general population presents a significant clinical challenge given the high rate of progression to full-blown diabetes and the associated increase in cardiovascular risk and other complications, and justifies the need for early corrective intervention based on lifestyle changes supported by supplements to modulate postprandial glycemic peaks. This open-label study, based on a cross-over model, was conducted on a sample of 25 overweight patients with IFG taking part in a standardized lifestyle intervention program in order to analyse its effectiveness in modulating postprandial glycemic peaks as well as the gastrointestinal tolerability of a specific, standardized polyphenolic supplement (extracted from *Ascophyllum nodosum* and *Fucus vesiculosus*). The trend in capillary blood glucose values measured in patients enrolled in the study confirms the ability of the product used to modulate glycemic fluctuations both after ordinary meals consumed in real-life conditions and after a standard meal with controlled intake of carbohydrates, compared to observed values after consuming the same meals without supplements. The homogeneity of the glycemic values observed three hours after the standard meal, both with and without supplementation, also confirms the absence of late hypoglycaemic effects.

Anti-lipase Activity and Phenolic Compounds of *Viburnum opulus* Fruits

Anna Podsędek*, Dominika Polka, Dorota Sosnowska and Paulina Torke

Institute of Technical Biochemistry, Department of Biotechnology and Food Sciences, Lodz University of Technology, Poland

Abstract

Lipase inhibitors appear to be effective for preventing obesity and for its therapy by controlling the absorption of fat in the diet, as this fat is an energy source with a high caloric content. Pancreatic lipase (PL) is a water-soluble enzyme that catalyzes the hydrolysis of the ester bonds of triacylglycerols to form monoacylglycerol and two fatty acids at the interface between an insoluble substrate and water. This enzyme is responsible for digestion of 50-70% of total dietary lipids in the intestinal lumen.

The inhibitory activity on PL by crude acetone extract and phenolic-rich extract from *Viburnum opulus* fruits was examined *in vitro*. PL activity was determined by measuring the amount of released of free fatty acids from hydrolysis of glycerol trioleate emulsified with bile acids.

The IC_{50} values of crude extract and phenolic-rich extract against PL were 11.69 ± 0.10 and 3.29 ± 0.06 mg/mL, respectively. The both extracts inhibited PL activity in a dose dependent manner. To compare the inhibitory activity of the extracts with positive control, Orlistat (a potent and specific lipase inhibitor) was also tested, showing IC_{50} value of 0.38 μg/mL. The kinetic analysis revealed that PL was inhibited by the both extracts in a mixed-type manner. Furthermore, the synergistic inhibition also found in combination of phenolic-rich extract and Orlistat. The LC/MS analysis of extracts showed the hydroxycinnamic acids, especially chlorogenic acid, as the main phenolic components.

The present research was performed under the financial support of the Polish National Science Centre (project nr 2016/23/B/NZ9/03629).

An Audit to Determine if Vitamin B12 Supplementation is Necessary After Sleeve Gastrectomy

Amar M Eltweri*, David J Bowrey, Christopher D Sutton, Lisa Graham and Robert N Williams

Department of Surgery, Leicester Royal Infirmary, Level 6 Balmoral Building, Leicester, LE1 5WW, UK

Abstract

Sleeve gastrectomy has increased in popularity over the last decade and it is likely to supersede gastric banding. Nevertheless, it is unclear whether vitamin B12 supplementation is required after surgery. The aim of this short report is to identify any vitamin B12 deficiency and highlight the necessity of post laparoscopic sleeve gastrectomy vitamin B12 monitoring.

Patients and methods: A review of 66 patients underwent LSG in our institution. Twenty-five patients were excluded as they had no postoperative vitamin B12 screening. Forty-one patients were included as screened for vitamin B12 and other micronutrients including selenium, serum folate, ferritin, iron, zinc, copper, magnesium and vitamin D.

Result: There were 5 male (12%) and 36 females (88%), 8/41 patients (20%) had Vitamin B12 deficiency, none of them developed macrocytic anemia. Seventeen out of twenty-one (81%) patient had low vitamin D and 9/21 (43%) exhibited low selenium.

Conclusion: In this small group, a 20% prevalence of vitamin B12 was identified. As a consequence, vitamin B12 monitoring and supplementation will be a standard of care in the early postoperative period after LSG at this institution.

Keywords: Sleeve gastrectomy, Vitamin B12 deficiency, Anemia OR sleeve gastrectomy, Cyanocobalamin deficiency OR sleeve gastrectomy

Insulin Resistance and Cardiometabolic Risk Factors in Obese Children and Adolescents: A Hierarchical Approach

Irine-Ikbale Sakou[1*], Theodora Psaltopoulou[2], Theodoros N. Sergentanis[2], Kyriaki Karavanaki[3], Feneli Karachaliou[4], Ioannis Ntanasis-Stathopoulos[2], Stamatios Tzanninis[2], Triantafyllia Sdogou[3] and Artemis Tsitsika[1]

[1] Adolescent Health Unit (A.H.U.) - University of Athens, Second Department of Pediatrics, «P. & A. Kyriakou» Children's Hospital, Athens, Greece
[2]Department of Hygiene, Epidemiology and Medical Statistics, Medical School, National University of Athens, Greece
[3]Diabetic Clinic, Second Department of Pediatrics, «P. & A. Kyriakou» Children's Hospital, National and Kapodistrian University of Athens School of Medicine, Athens, Greece
[4] Departmentt of Endocrinology, « P & A Kyriakou» Children's Hospital, Athens, Greece

Abstract

Insulin resistant (IR) is one of the most important consequences of obesity and a further investigation is needed. The objective of this study was to globally assess the network of insulin resistance and its related factors, in a sample of overweight and obese Greek youth. 185 subjects with a mean age of 13.6 ± 2.2 years were examined. Data, including immutable demographic features and early life parameters (age, gender, number of siblings birth weight, gestational age of delivery, breastfeeding), current anthropometric measures (weight, height), IR, unfavorable clinical conditions (blood pressure, biochemical parameters including fasting blood glucose and insulin levels, fasting lipid profile, serum levels of serum glutamic-pyruvic transaminase (SGPT), serum glutamic oxaloacetic transaminase (SGOT), uric acid, menarche age, hirsutism, acne) and finally, social parameters (school grades) were retrospectively collected. IR was quantified by homeostasis model assessment (HOMA-IR) and two analyses were performed based on HOMA-IR cut-off values (3.16 and, as alternative, 3.99). Multivariate hierarchical approach was performed to describe the dynamic network of these risk factors. The study showed that obesity was associated with IR (adjusted OR = 3.19, 95% CI: 1.12-9.09). IR steadily predicted low HDL (adjusted OR = 5.75, 95% CI: 1.58-20.87), hypertriglyceridemia (adjusted OR = 1 0.28, 95% CI: 1.18-89.55) and systolic hypertension. At the alternative analysis, IR was also associated with older age, older age at menarche, hyperuricemia and low school grades. In conclusion, IR, emerging on the grounds of obesity, confers risk for dyslipidemia and hypertension at a relatively early age. Interventions targeted at insulin resistance along with weight loss are required to prevent cardiometabolic risk in adolescence.

Obesity in a Peri-Urban Population in West Africa: Prevalence and Associated Factors

Malik Koussoh Simone[1*], Kassi Anicet Adoubi[2], Jerôme Kouamé[3], Philomène Kouadio[3], Madikini Coulibaly[1], Serges OGA[3] and Luc Kouadio[3]

[1]National Institute of public health, Côte d'Ivoire
[2]University Alassane Ouattara of Bouaké, Côte d'Ivoire
[3]University Felix Houphouet Boigny of Abidjan, Côte d'Ivoire

Abstract

Objectives: Estimate prevalence and investigate obesity and some factors associated in a peri urban area of a metropolis in West Africa.

Methods: A cross-sectional study was conducted in Abidjan (Côte d'Ivoire ; West Africa) in Anonkoi 3 district, from 24 April to 23 May 2014. Sociodemographic data and dietary habits were collected. Obesity, socioeconomic level and physical activity level were assessed. Blood pressure was measured. Univariate and multivariate analysis were conducted Existence of associations between obesity and the different factors was demonstrated by chi-square test at the 0.05 significance threshold.

Results: We recruited 486 adults aged from 18 years and older, including 327 women and 159 men. Average age was 36.1(± 12.83) years. Prevalence of obesity was 14.8%. Age range 30 to 45 (OR = 2.63 ; 95% CI, p = 0.003) ; female (OR= 4.59 ; 95% CI, p = 0.000) ; high blood pressure (OR = 2.43 ; 95% CI, p = 0.000) and low level of physical activity (OR = 1.72 95% CI, p = 0.033) in univariate analysis were significantly associated with obesity. Marital status, education level, socio-economic level and snacking were not significantly associated with obesity. In multivariate analysis only age, sex and blood pressure were associated with obesity.

Conclusion: As well as those of some developed countries, obesity is a real challenge for public health for peri-urban populations in developing countries.

Keyword: Obesity, Africa, Peri-urban area, Age, Female

Obesity as One of the Factors of Diabetes Type 1 in the Seventeen Years Old Female Patient

Maja Okońska[*], Karolina Wójcikiewicz and Małgorzata Myśliwiec

Medical University of Gdańsk, Poland

Abstract

A female patient aged 17 was admitted to Diabetology Department with accidental hyperglycaemia 44 mmol/l, polyuria, polydipsia, weight loss. There was no diabetes in family, but psoriasis and rheumatoid arthritis were revealed in one second degree relative. Patient presented obesity since she was six years old with maximum weight at the age of twelve 105 kg, BMI 46. Fasting glucose was then elevated -6,1 mmol/l, but there was no diet nor physical activity started. For two years since the age of sixteen, the patient revealed weight loss, polydipsia, polyuria. For last three months she was very tired, sleepy, she drank 10 liters per day, urinated every 1-2 hours, even at night. Physical examination revealed overweight, height 162cm (25-50cpc); weight 67kg (75-90pc); BMI 25,5 kg/m^2 (90-97pc), Tanner 5. Laboratory tests showed normal acid-base balance with ketonuria and glucosuria; fasting glycaemia 19,7 mmol/l; HbA1c 21,5%, c-peptide 0,24 ng/ml. Beta-cell destruction was confirmed by positive antibodies: ICA 1:40 ; GAD 51,6 (IU/ml). Laboratory tests revealed celiac disease as well. We started therapy with insulin lispro in multiple injections for meals, basal insulin glargine (DDI 44j.) and metformin (500mg) once daily and gluten-free diet.

Conclusions: Obesity mainly induce type 2 diabetes, but because of correlation with beta-cell destruction it may affect diabetes type 1 occurrence as well.

Breast Cancer and Hypovitainosis D in Premenopausal Women: Correlation with BMI and Insulin Resistance

Mehaoudi Rym-Ikram[1*], Adane Saida[2] and Soltani Yacine[1]

[1]Department of Biology and Physiology of Organisms, Faculty of Biological Sciences, USTHB, Algeria
[2]Department of Oncology, Central Army Hospital, Ain Nadja, Algeria

Abstract

Introduction: Hypovitaminosis D is associated with obesity and the proliferation of cancer cells, including breast carcinomas. The purpose of this study is to analyse corrélations of 25(OH)D3, insulin levels, BMI and insulin resistance in premenopausal breast cancer patients according to their BMI and vitamin D status.

Materials and Methods: 96 Algerian premenopausal patients newly diagnosed with breast cancer, aged 21 to 53 years were recruited, among them 66 are deficient (<20ng/ml), 23 insufficient (20-30ng/ml) and 7 with optimal vitamin D levels (≥30ng/ml). Plasma levels of 25(OH)D3 and insulin were measured by RIA, fasting blood glucose, as well as the HOMA-IR index were analyzed.

Results: Obesity is prevalent in 33,33% of patients with deficiency compared to 21,7%, 14,3% with insufficiency and optimal vitamin D levels respectively. We note a significant difference (p = 0.01) in the HOMA-IR index between the groups of deficiency, insufficiency and optimal with means of (2.44 ± 0.21/1.93 ± 0.27/0.94 ± 0.1) respectively. 37,9% of deficient patients are IR (HOMA-IR = 4.26 ± 0.31), 30,4% of deficient patients (HOMA-IR = 3.60 ± 0.43), (p = 2.407e-^{13}) Patients IR have a BMI of (30.51 ± 6.09kg/m^2) versus NON-IR (BMI = 26.81kg/m^2). A significant correlation was shown between BMI and blood glucose (p = 0.001/**r** = 0.32), insulin (p = 0.002/**r** = 0.30) and HOMA-IR (p = 0.001/**r** = 0.31) also between 25(OH) D3 and blood glucose (p = 0.04/**r** = -0.20), insulin (p = 0.004/**r** =-0.28) and HOMA-IR (p = 0.002/**r** = -0.30).

Conclusion: These results suggest that the increase in insulin levels and the HOMA index was associated with low levels of 25OHD3 in obese and overweight patients. Constant supplementation with vitamin D adjuvant therapy, combined with physical activity, would help reduce BMI, improve insulin sensitivity and increase the percentage of remission.

E-Poster

Sedentary Behavior in Overweight Patients with Fibromyalgia, What is Different?

Beatriz Rodríguez Roca* and Ana Gascón Catalán

University of Zaragoza, Spain

Abstract

Background: Fibromyalgia is a chronic disease that causes osteoarticular pain, alterations in the sleep-rest pattern, cognitive

alterations and anxiety. Its etiology is still not well defined, although it could be associated with other pathologies such as some rheumatic diseases or psychiatric disorders.

Objectives: To analyze if there are differences in sedentary patients with overweight or moderate obesity and fibromyalgia with respect to a control group in order to design specific interventions to modify sedentary habits.

Methods: Transversal descriptive study. Women were randomly selected. The sample was divided into two groups depending on whether they had fibromyalgia or not. Sociodemographic, biochemical and clinical variables, quality of life and physical activity level were studied.

Results: There are significant differences in all the sociodemographic variables studied, highlighting the lower percentage of female workers ($p < 0.001$) and the lower level of studies in the group with fibromyalgia ($p < 0.001$). A higher percentage of depression ($p < 0.001$) and osteoarticular diseases were also observed in these patients ($p < 0.001$). Finally, the level of physical activity is lower ($p < 0.001$) and have a worse quality of life ($p < 0.001$) in patients with fibromyalgia.

Conclusions: Fibromyalgia patients with overweight or moderate obesity are less physically active compared to the control group. The initial characteristics in the variables studied differed in both groups, so it would be necessary to take it into account when designing interventions.

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