DIABETES MEET
March 20-21
VIRTUAL EVENT
2023

VIRTUAL EVENT

3rd International Conference on

DIABETES, ENDOCRINOLOGY

&

OBESITY

March 20 - 21, 2023

DIABETES MEET 2023

https://diabetesmeet.com/

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VIRTUAL MEET

3rd International Conference on

Diabetes, Endocrinology and Obesity

DAY 1

MONDAY 20 2023

SCIENTIFIC PROGRAM

BST - British Summer Time

08:30-09:00	Opening cermony

Keynote Precentations

09:00-09:35	Title: Viral infections of pregnant women may be early triggers of childhood type 1 diabetes and other autoimmune disease Zvi Laron Schneider | *Schneider Children's Medical Center | Israel*
09:35-10:05	Title: Metal ion dyshomeostasis as a driver of coagulatory complications in type 1 and type 2 diabetes Alan J. Stewart | *University of St Andrews | UK*

Distinguished Speaker Talks

Sessions: Diabetes Mellitus type 1 | Diabetes Mellitus type 2 | Diabetes Research and Clinical Practice | Covid 19 and Diabetes | Natural therapy for Diabetes | Thyroid Disorders | Treatment and Diagnosis of Endocrine Diseases | Diabetes Research and Clinical Practice | Gestational Diabetes | Related Diseases of Diabetes and Risk Factors | Cardiovascular risk in Type 2 Diabetes

10:05-10:25	Title: Individualising treatment of painful diabetic neuropathy–How to choose the optimal medical regime for painful diabetic neuropathy according to patient characteristics: A Narrative Review Erwin Yii | *Eastern Health |Australia*
10:25-10:45	Title: Evaluation and understanding the use of evidence-based medical therapy in patients with peripheral artery disease: A qualitative study Yingqi Xu | *Singapore Health Services | Singapore*

10:45-11:00 Refreshment Break

11:00-11:20	Title: Diagnosis and treatment of diabetes syndrome caused by WFS1 mutation Yu Ding | *Shanghai Jiao Tong University | China*
11:20-11:40	Title: Validation of a Dietary Inflammatory Index (DII) and Association with Risk of Gastric Cancer: A Case-Control Study Adeleh Khodabakhshi | *Kerman University of Medical Sciences | Iran*

11:40-12:00	Title: Diabetes Mellitus and Oral Complications Bita Bita. Rohani | *Aja University of Medical Sciences | Iran*
12:00-12:20	Title: Study of Adipolin Gene expression Analysis in Type 2 Diabetes Mellitus Patients Peter John | *National University of Sciences & Technology | Pakistan*
12:20-12:40	Title: Effects of Sodium Glucose Transporter 2 (SGLT2) Inhibitors on Renal and Cardiovascular Function in People with Diabetes Type 2 Tariq Farhad Seha | *Ambulatory Healthcare Services | UAE*
12:40-13:00	Title: Global DNA methylation profiling in pregnancies complicated with different types of diabetes Stephanie Dias | *South African Medical Research Council | South Africa*
13:00-13:45 Lunch Break	
13:45-14:05	Title: Disease progression promotes changes in adipose tissue signatures in type 2 diabetic (db/db) mice: The potential pathophysiological role of batokines Khanyisani Ziqubu | *North-West University | South Africa*
14:05-14:25	Title: Circadian Rhythm of Blood Pressure in Diabetic Patients Ergita Nelaj | *UHC "Mother Teresa" | Albania*
14:25-14:45	Title: Animal Welfare in Diabetes Research: A Humane Endpoint Scoring System Ana I Faustino-Rocha | *University of Trás-os-Montes and Alto Douro | Portugal*
14:45-15:05	Title: Polycystic Ovary Syndrome & Type 2 Diabetes Mellitus Aboubakr Elnashar | *Benha university Hospital | Egypt*
15:05-15:25	Title: Type II Diabetes in Morocco: Food Approach and Hygiene of Life Maryem Arraji | *Hassan First University of Settat | Morocco*

15:25-15:35 Refreshment Break	
15:35-15:55	Title: Potential role of SGLT2i in patients with T2DM and Osteoarthritis Bijay Patni | *Shanti Wellness care | India*
15:55-16:10	Title: Personal Hygiene and Sglt2I Abhisekh Raha | *Lumding Divisional Railway Hospital | India*
16:10-16:30	Title: Insulin resistance in diabetes and cardiovascular disease: A future perspective Souravh Bais | *SAGE University | India*
16:30-16:40	Title: Astaxanthin and its role in the prevention of dyslipidemia and visceral adiposity. Studies in a diet-induced Metabolic Syndrome rodent model María del Rosario Ferreira | *University of Litoral. Santa Fe | Argentina*
16:40-17:00	Title: Insulin B peptide-MHC class II-specific chimeric antigen receptor-Tregs prevent autoimmune diabetes Brian T Fife | *University of Minnesota Medical School | USA*
Panel Discussion	
End of Day 1	

DAY 2

TUESDAY 21 2023

SCIENTIFIC PROGRAM

BST - British Summer Time

09:00-09:20	Title: Potential molecular mechanisms underlying the action of saffron against renal ischemia/reperfusion in non-diabetic/diabetic mice Ramona D'Amico | *University of Messina | Italy*
09:20-09:40	Title: Molecular targets for anti-oxidative protection of Açaí berry against diabetes myocardial ischemia/reperfusion injury Rosalba Siracusa | *University of Messina | Italy*
09:40-10:00	Title: Consumption of Cashew (Anacardium occidentale L.) Nuts Counteracts Oxidative Stress and Tissue Inflammation in a Condition of mild Hyperhomocysteinemia in Rat Daniela Impellizzeri | *University of Messina | Italy*
10:00-10:20	Title: Using GH-Method: Math-physical medicine (MPM) to Analyze Metabolism and Improve Health Conditions Gerald C. Hsu | *eclaireMD Foundation | USA*
10-20-10:40	Title: Ketone Ester Applications and Clincal updates Raffaele Pilla | *St. John of God Hospital | Italy*
10:40-11:00	Title: Glucose Toxicity: The worldwide problem and the natural solution John F. Burd | *Lysulin, Inc | USA*

Panel Discussion

End of Day 2

SCIENTIFIC ABSTRACTS

DAY 1

DIABETES MEET
March 20-21
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Virtual Meet

3rd International Conference on

DIABETES, ENDOCRINOLOGY and OBESITY

March 20-21, 2023

KEYNOTE PRESENTATIONS

Viral infections of pregnant women may be early triggers of childhood type 1 diabetes and another autoimmune disease

Zvi Laron[1], Lester Shulman[2], Christiane Hampe[3], and Orit Blumenfeld[4]

[1]Schneider Children's Medical Center, Israel
[2]Central Virology Laboratory, Israel
[3]University of Washington, USA
[4]Israel Center for Disease Control, Israel

Abstract:

Children and adolescents with early onset autoimmune diseases have a different seasonality of month of birth than the general population. This pattern is consistent with an infection during pregnancy affecting the fetus or an infection immediately after birth that acts as an early trigger of autoimmune diseases. We present data supporting the use of Rotavirus vaccinations in the reduction of the incidence of childhood T1D and propose further investigations into whether other anti-virus vaccinations may reduce the burden of other autoimmune diseases such as multiple sclerosis, atopic dermatitis, psoriasis, and subtypes of rheumatoid arthritis, Hashimoto thyroiditis.

Biography:

Laron Zvi did his Graduate from Hebrew University Medical School, Jerusalem, Israel. From 1952-54 he is a Pediatric Residency at Rambam Hospital, Haifa, Israel. From 1954-57 he has done his Postgraduate Fellowship in Pediatric Endocrinology from Massachusetts General Hospital, Harvard Medical School, Boston. Then from 1958-1992, he is the Head Institute for Pediatric Endocrinology from Beilenson and Schneider, Full Professor of Pediatric Endocrinology from Sackler School of Medicine. From 1993 to the present he has been a Director of, the Endocrinology and Diabetes Research Unit at Schneider Children's Medical Center.

He is the author of 1100 peer-reviewed scientific authors/editors of 30 books, for his H-index is 75. He is Twice past President of ESPE and Founder, Secretary, and past President of ISPAD. He has received numerous International prizes and 5 honorary PhD.

Metal ion dyshomeostasis as a driver of coagulatory complications in type 1 and type 2 diabetes

Alan J. Stewart

University of St Andrews, UK

Abstract:

Diabetes is a group of conditions that impact upon the body's ability to control blood glucose concentration. In type 1 diabetes (T1DM) is largely due to insulin insufficiency. Type 2 diabetes (T2DM) is associated with defective insulin signalling. Both T1DM and T2DM have wide-ranging consequences for the body as glucose levels are associated with many physiological processes. Individuals with diabetes have an increased risk of cardiovascular disease and coagulatory defects are observed in individuals with T1DM and T2DM. Our work has revealed that metal ion homeostasis is differentially affected in T1DM and T2DM. For example, HbA1c, a marker for elevated blood glucose, correlates with plasma concentrations of magnesium (negatively) in T1DM and copper (positively) in T2DM.

Notably, in ex vivo experiments, the reduced plasma Mg^{2+} in T1DM was found to be associated with abnormal fibrinolysis. In addition, we have shown that T2DM is associated with defective plasma Zn^{2+} handling, caused by increased non-esterified fatty acid (NEFA) binding to human serum albumin (HSA) – an interaction which allosterically regulates the ability of the protein to bind and buffer Zn^{2+}. Using isothermal titration calorimetry, we reveal that pathophysiological concentrations of NEFAs reduce Zn^{2+} binding to HSA. Addition of myristate and Zn^{2+} increase thrombin-induced platelet aggregation in platelet-rich plasma and increase fibrin clot density and clot time in a purified protein system. The concentrations of key saturated and monounsaturated NEFAs positively correlate with fibrin clot density in individuals with T2DM and controls.

Collectively, this work increases our understanding of the roles Mg^{2+} and Zn^{2+} play in the development of thrombotic complications T1DM and T2DM and will have future implications for the management of diabetes.

Biography:

Alan Stewart graduated from the University of Edinburgh with a BSc(Hons) degree in Biochemistry in 1999 and a PhD in 2003. In 2009 After postdoctoral positions in Edinburgh at the Roslin Institute and MRC Human Reproductive Sciences Unit he moved to the University of St Andrews to establish his own research group. His research focuses on metal ions in disease. To date his work has attracted grant funding from UK Research Council, British Heart Foundation, Fight for Sight, and The Leverhulme Trust. He has published over 85 research papers, many of which are in world-class and field-leading journals. He has sat on several UK Research and Innovation grant panels, is a member of the Narodowe Centrum Nauki (NCN) - National Science Centre of Poland Funding Panel, and sits on the Editorial Boards of the journals, Scientific Reports, Nutrients, and BioMetals. He has an H-index of 35 (Google Scholar).

SPEAKER PRESENTATIONS

DIABETES MEET 2023
MARCH 20-21, 2023

Individualising treatment of painful diabetic neuropathy–How to choose the optimal medical regime for painful diabetic neuropathy according to patient characteristics: A Narrative Review

Erwin Yii, T Chong, and J Chan
Eastern Health, Australia

Abstract:

Painful diabetic neuropathy is a notoriously difficult diabetic complication to manage and is associated with significant morbidity including sleep disturbance and depression. Numerous guidelines have been released recommending the use of tricyclic antidepressants, anticonvulsants or serotonin and norepinephrine reuptake inhibitors as first line treatments. However, guidance regarding which to choose according to individual patient characteristics is scant. Choice of first line treatment is often left to practitioner discretion. This review examines the current literature around the efficacy of diabetic neuropathy treatment with a view to identifying which patient profiles correspond best to particular medical regimes to improve rates of adherence and response to treatment.

Biography:

Erwin Yii is an Australian-based health professional. Erwin is trained as a Medical Practitioner Surgical Resident at Eastern Health Interest in vascular and general surgery.

Evaluation and understanding the use of evidence-based medical therapy in patients with peripheral artery disease: A qualitative study

Yingqi Xu[1], Candelyn Pong[1], Charyl Jia Qi Yap[2], Vanessa Khoo[2], Nicholas Graves[3], Tze Tec Chong[2], Tze Tec Chong[4] and Sze Ling Chan[1,3*]

[1]Singapore Health Services, Singapore
[2]Singapore General Hospital, Singapore
[3]Duke-NUS Graduate Medical School, Singapore
[4]Gleneagles Hospital, Singapore

Background:

The global burden of peripheral artery disease (PAD) has been increasing. Treatment guidelines for PAD have detailed that evidence-based medical therapy (EBMT) should be used to reduce the risks of cardiovascular events and death. This study aimed to understand the current practices regarding EBMT prescription in PAD patients and the key barriers and facilitators for implementing PAD guidelines.

Methods:

A qualitative study was conducted in the largest tertiary hospital in Singapore from December 2021 to August 2022. The participants included healthcare professionals and in-patient pharmacists involved in the care of PAD patients, as well as patients with PAD who had undergone a lower limb angioplasty. Data were collected through in-depth, individual semi-structured interviews conducted face-to-face or remotely by a trained research assistant. Interviews were audio-recorded, transcribed, and systematically coded using Nvivo. The Tailored Implementation for Chronic Diseases (TICD) framework was used to guide the interviews and analysis.

Results:

A total of 11 healthcare professionals (4 junior consultants, 6 senior consultants, and 1 senior in-patient pharmacist) and three patients were recruited. Four main themes emerged: (1) antiplatelets and statins were commonly prescribed, despite the fact that doctors were not familiar with updated PAD treatment guidelines or department treatment protocols;

(2) not being patients' primary care providers, doctors faced multiple barriers to implementing EBMT in PAD patients with polypharmacy and comorbidities due to concerns about side effects and limited consultation time; (3) collaborative care, with the involvement of nurses or pharmacists, was advocated to improve interprofessional communication and patient education to facilitate EBMT practice; (4) patients' had limited understanding of their prescribed medications, even though they deemed that their medication adherence was high.

Conclusions:

Findings from this study may inform strategies for improving healthcare professionals' adherence to guidelines and patients' medication adherence.

Biography:

Yingqi Xu is a research fellow Singapore Health Services. She done her master's degree from 2014 to 2017. She awarded the Scientific and Technological Research & Development Awards for Postgraduates in 2018. She done his PhD on Doctor of Philosophy from 2018-2022. Her Research interests include health service research and health economics, specifically in the field of chronic diseases. Her research supported by the Health Services Research Competitive Research Grant from the Ministry of Health, Singapore.

Diagnosis and treatment of diabetes syndrome caused by WFS1 mutation

Yu Ding

Shanghai Jiao Tong University, China

Background:

WFS1-related disorders involve a wide range of clinical phenotypes, including diabetes mellitus and neurodegeneration. Inheritance patterns of pathogenic variants of this gene can be autosomal recessive or dominant, and differences in penetrance present challenges for accurate diagnosis and genetic counseling.

Methods:

Three probands and one elder brother from three families were systematically evaluated and the clinical data of other family members were collected from the medical history. Whole-exome sequencing was performed on the probands, and RNA sequencing was performed on four patients, their parents with WFS1 variants, and four gender- and age-matched children with type 1 diabetes mellitus.

Results:

There were six patients with diabetes. Dilated cardiomyopathy, a rare manifestation of WFS1-related disease, was identified in one patient, along with MRI findings of brain atrophy at age 7 years and 3 months, the earliest age of discovery we know of. Whole-exome sequencing revealed five pathogenic or likely pathogenic variants in the WFS1 gene , of which 3 variants were novel that has not been previously reported. The differentially expressed genes were mainly associated with immune-related pathways according to the Gene Ontology enrichment analysis of the RNA sequencing data. The exon 1 region of HLA-DRB1 in two patients was not transcribed, while the transcription of the region in their parents was normal.

Conclusions:

This study emphasizes the clinical and genetic heterogeneity in patients, even in the same family with WFS1 variants. MRI evaluation of the brain should be considered when WFS1-related disorder is first diagnosed.

Biography:

Yu Ding MD., Deputy Chief Physician in the Department of Endocrinology and Metabolism at Shanghai Children's Medical Center Affiliated to Shanghai Jiaotong University. She is a member of Youth Committee of Children's Disease and Health Care Branch of China Maternal and Child Health Care Association, member of Endocrine Genetic Metabolism Group of Pediatric Branch of Shanghai Medical Association. She has won the Science and Technology Innovation Award for Medical Clinical Youth of Shanghai Women Physicians Association. She has been engaged in clinical work of endocrine metabolism department for many years and is good at diagnosis and treatment of common diseases such as short stature, precocious puberty, thyroid disease and diabetes.

She focuses on the clinical study of Turner syndrome, sexual dysplasia and special type diabetes. Presided over a youth project of "Medical Engineering Cross Research Fund" of Shanghai Jiaotong University, a college level fund project of Shanghai Children's Medical Center, a horizontal project of Shanghai Children's Medical Center, participated in major projects of Shanghai Science and Technology Commission and general projects of the National Natural Science Foundation of China, and published more than 20 papers.

Validation of a Dietary Inflammatory Index (DII) and Association with Risk of Gastric Cancer: A Case-Control Study

Adeleh Khodabakhshi and Farhad vahid

Kerman University of Medical Sciences, Iran

Background:

Gastric cancer (GC) is the fifth most common malignancy and the second leading cause of cancer-related deaths worldwide. Studies have shown that dietary components and inflammation are implicated in the etiology of GC

Methods:

We examined the ability of a dietary inflammatory index (DII) to predict the odds of GC in a case-control study conducted from December 2014 to May 2016. The subjects were 82 cases and 95 controls who attended specialized centers in Tabriz, Iran. DII scores were computed from a validated 168-item food frequency questionnaire. Logistic regression models were used to estimate odds ratios (ORs) adjusted for age, sex, body mass index, education, smoking, alcohol, H.pylori infection, physical activity, aspirin/NSAID use and total caloric intake.

Results:

In the fully adjusted model, subjects with a DII score >-1.77 had nearly 3.5 times higher odds of having GC compared with subjects with DII≤-1.77, (ORDII>-1.77≤-1.77=3.39; 95%CI=1.59, 7.22). Also, for every one-unit increase in DII, there was a corresponding increase in hs-C-reactive protein, tumor necrosis factor-alpha, interleukin (IL)-6 and IL-1b: β=0.09, 0.16, 0.16 and 0.10, respectively; and a corresponding decrease in IL-10: β=-0.11. Conclusion: Subjects who consumed a more pro-inflammatory diet were at increased odds of GC compared to those who consumed a more anti-inflammatory diet.

Biography:

Adeleh Khodabakhshi, was born in Iran. She received her Ph.D degrees in nutrition from Shahid Beheshti University of Medical Sciences in 2019. She is currently working at the nutrition department, Kerman University of Medical Sciences as an assistant professor. Her research interests include nutrition and cancer. She published 26articles, in clinical nutrition journal with impact factor 7 , European Journal of Clinical Nutrition IF= 4, nutrition journal IF= 3.3 , nutrition and cancer journal IF= 2.6. and ets. Accord scopus index, Her publication h-index is 6. She has been serving as a reviewer board member of several reputed journals such as nutrition and cancer journal. And was invited as a speaker to many international congresses.

Diabetes Mellitus and Oral Complications

Bita. Rohani

Aja University of Medical Sciences, Iran

Abstract:

Diabetes mellitus (DM) is a chronic metabolic disorder characterized by high blood glucose levels in the body. This disease can cause many complications in different regions of the body, including the oral cavity. The significant oral signs and symptoms related to DM comprise xerostomia, dental caries, gingivitis, periodontitis, increased tendency to oral infections, burning mouth, taste disorder, and poor wound healing. These complications are considered serious and can influence the quality of life. There is evidence that chronic oral complications due to DM have adverse effects on glycemic control, so prevention and management of these problems are very important. In this paper, an attempt has been made to increase the knowledge regarding oral complications associated with DM.

Biography:

Bita Rohani is an Associate professor of oral medicine. She graduated from dental faculty of Tehran University seventeen years ago. She has more than fifteen years of teaching experience. In addition, during these years, she has various research activities, including publication of several articles and a number of books.

Study of Adipolin Gene expression Analysis in Type 2 Diabetes Mellitus Patients

Peter John, Yousaf Kamran and Attya Bhatti

National University of Sciences & Technology (NUST), Pakistan

Abstract:

Type 2 Diabetes Mellitus is a metabolic and multifactorial disorder. It involves insulin resistance which sometimes leads to β cell failure. Adipolin is a novel adipokine released from white adipose tissue. It has insulin sensitizing and anti-inflammatory effects. The levels of adipolin are found to be reduced in diet induced obese mice leading to impaired glucose tolerance. The study aimed to check the relative expression and acetylation status of histone H3 Lysine 9 of adipolin in non-diabetics and type 2 diabetes patients. Acetylation of histone H3 Lysine 9 unwinds the chromatin, allowing access of transcription factors to the gene. Adipose tissue biopsies of control and type 2 diabetes patients were collected. Quantitative analysis was performed and expression levels were compared in both groups.

Methylation specific PCR was performed for promoter methylation analysis. Acetylation status of histone H3 Lysine was analyzed using chromatin immuno-precipitation protocol followed by gene specific polymerase chain reaction. The expression of adipolin was found to be reduced in type 2 diabetes patients as compared to controls. The investigated promoter region of adipolin was not found to be methylated. Both groups were found to have acetylated histone H3 Lysine 9 in adipolin gene region. We concluded that type 2 diabetes patients have suppressed expression of adipolin but this was not due to promoter methylation or de-acetylation of histone H3Lysine 9 in adipolin region. Further studies are required to find the causative factor of adipolin down regulation.

Biography:

Peter John is Tenured Professor at Atta-Ur-Rahman School of Applied Biosciences (ASAB), NUST. He made an excellent progress in research, teaching & administration. He done his PhD from Molecular Biology/Biochemistry at Quaid-i-Azam University from April 01, 2004 - February 07, 2008.

Effects of Sodium Glucose Transporter 2 (SGLT2) Inhibitors on Renal and Cardiovascular Function in People with Diabetes Type 2

Tariq Farhad

SEHA -Ambulatory Healthcare Services, UAE

Abstract:

Type 2 diabetes mellitus is the chief potential risk factor for several life-threatening health problems such as myocardial infarction, thromboembolism, end-stage renal diseases, etc. While cardiovascular disease is reported as the leading cause of mortality among diabetic patients. Along with cardiovascular complications, type 2 diabetes mellitus is also associated with an increased risk of adverse effects on renal physiology, with almost more than 35% of diabetic patients developing diabetic nephropathy during their lifetime.

Sodium-glucose co-transporter type 2 inhibitors are the new class of glucose-lowering agents that have the potential role in reducing the risk of major adverse cardiovascular events as well as improving renal function outcomes. SGLT2 inhibitors are reported to play a pivotal role in the management of type2 diabetic patients because of their added benefits on other organ systems. These drugs are not only efficacious as anti-diabetic but are also reported to have cardio-protective as well as reno-protective effects among diabetic (with or without known history of cardiac or renal dysfunction) and non-diabetic patients alike.

This review was designed to provide the deeper insight of the role of SGLT2 inhibitors in protecting the cardiac and renal functions among the type 2 diabetic patients by reviewing the recent literature that shed new light on the therapeutic potential of SGLT2 inhibitors and the involved reno-protective as well as cardio-protective mechanisms.

Biography:

Tariq has recently completed his MSc in Diabetes in 2021 from University of South Wales UK and the above abstract is He is working as a General Practitioner in Department of health Abu Dhabi. In addition to MSc Diabetes He has also achieved Specialization in Family Medicine by doing MCPS Family Medicine from Pakistan and MRCGP International from Royal college of General Practitioners UK. He has 11 years of international experience of working as a family Physician in different parts of the world such as Pakistan, from his Thesis. Maldives, Kingdom of Saudi Arabia and. He has also published 3 papers in reputed.

Global DNA methylation profiling in pregnancies complicated with different types of diabetes

Stephanie Dias[1] , J van Niekerk[2], S Adam[3] and C Pheiffer[1,2,3]
[1]South African Medical Research Council, South Africa
[2]Stellenbosch University, South Africa
[3]University of Pretoria, Pretoria South Africa

Background:

Diabetes in pregnancy is associated with pregnancy complications, with the severity of the adverse effects related to the type of diabetes and degree of hyperglycaemia. The exact mechanisms that link maternal diabetes with adverse outcomes have not been elucidated. In recent years, DNA methylation, a widely explored epigenetic mechanism, has attracted increasing interest for its potential to serve as biomarkers of metabolic disease, or to elucidate disease pathophysiology.

Aim:

The aim of this study was to investigate whether global DNA methylation profiles differed in the blood of pregnant women with different types of diabetes.

Method:

Global DNA methylation levels were quantified in the peripheral blood of South African women with type 1 diabetes mellitus (T1DM) (n=6), type 2 diabetes mellitus (T2DM) (n=39), gestational diabetes mellitus (GDM) (n=29) and normoglycemia (n=32), using an enzyme-linked immunosorbent assay.

Results:

Global DNA methylation levels did not vary between pregnant women with different types of diabetes (p=0.808) and were not associated with glucose and insulin concentrations. However, global DNA methylation levels were 6% (p=0.021) lower in pregnant women with a history of chronic hypertension compared to controls and were positively correlated with total serum adiponectin concentrations (rs=0.2767, p=0.034).

Conclusions:

Global DNA methylation did not differ in pregnancies complicated with different types of diabetes. These preliminary findings suggest that despite the potential of DNA methylation to serve as a biomarker, global DNA methylation may not offer the resolution to detect subtle methylation differences. Further work to investigate gene-specific and genome-wide methylation is warranted in this population.

Biography:

Stephanie Dias, and she is a senior scientist at the Biomedical Research and Innovation Platform, at the South African Medical Research Council (SAMRC), with 8 years working experience in diabetes research and epigenetics. In 2020, she completed her PhD, which focused on integrating both basic and clinical research to potentially enhance the health and well-being of women and children affected by GDM, through biomarker discovery.

Her current research aims to elucidate the pathophysiological mechanisms that are implicated in the development and progression of different types of diabetes during pregnancy, using a variety of molecular and epigenetic mechanisms. In her career as a researcher and scientist, she published 29 articles in reputable, ISI peer-reviewed journals, and has presented her work at local and international conferences. In addition, she contributed towards capacity development through mentoring, training and supervising students.

Disease progression promotes changes in adipose tissue signatures in type 2 diabetic (db/db) mice: The potential pathophysiological role of batokines

Khanyisani Ziqubu[1], Phiwayinkosi V. Dludla[2,3], Babalwa U. Jack[2] and Sithandiwe E. Mazibuko-Mbeje[1]

[1]North-West University, South Africa.

[2]South African Medical Research Council, South Africa.

[3]University of KwaZulu-Natal, South Africa.

Abstract:

Unlike the white adipose tissue (WAT) which mainly stores excess energy as fat, brown adipose tissue (BAT) has become physiologically important and therapeutically relevant for its prominent role in regulating energy metabolism. The current study makes use of an established animal model of type 2 diabetes (T2D) db/db mice to determine the effect of the disease progression on adipose tissue morphology and gene regulatory signatures. Results showed that WAT and BAT from db/db mice display a hypertrophied phenotype that is consistent with increased expression of the pro-inflammatory cytokine, tumour necrosis factor-alpha (Tnf-α).

Moreover, BAT from both db/db and non-diabetic db/+ control mice displayed an age-related impairment in glucose homeostasis, inflammatory profile, and thermogenic regulation, as demonstrated by reduced expression of genes like glucose transporter (Glut-4), adiponectin (AdipoQ), and uncoupling protein 1 (Ucp-1). Importantly, gene expression of the batokines regulating sympathetic neurite outgrowth and vascularization, including bone morphogenic protein 8b (Bmp8b), fibroblast growth factor 21 (Fgf-21), neuregulin 4 (Nrg-4) were altered in BAT from db/db mice. Likewise, gene expression of meteorin-like (Metrnl), growth differentiation factor 15 (Gdt-15), and C-X-C motif chemokine-14 (Cxcl-14) regulating pro- and anti-inflammation were altered. This data provides some new insights into the pathophysiological mechanisms involved in BAT hypertrophy (or whitening) and the disturbances of batokines during the development and progression of T2D. However, these are only preliminary results as additional experiments are necessary to confirm these findings in other experimental models of T2D.

Biography:

Khanyisani Ziqubu is a PhD student in Biochemistry at North-West University South African Medical Research Council, South Africa. He holds a BSc in microbiology and biochemistry, a BSc Hons, and an MSc in biochemistry from the University of Zululand. He started his MSc in biochemistry at the South African Medical Research Council's Biomedical Research and Innovation Platform in 2018. His MSc thesis chapters were all published in high-impact publications and presented at local and international conferences. He presented the best poster at the 13th Annual Early Career Scientist Convention in Cape Town in 2019.

He has co-supervised five honours students while pursuing his PhD. He has written and co-written more than 30 peer-reviewed articles on the role of oxidative stress and inflammation in obesity, diabetes, fatty liver and cardiovascular diseases, as well as the therapeutic potential of phytochemicals from medicinal plants.

Circadian Rhythm of Blood Pressure in Diabetic Patients

Ergita Nelaj, Irida Kecaj and Mihal Tase
UHC "Mother Teresa", Albania

Background:

Blood pressure (BP) has a physiological circadian rhythm with a decrease of the values during sleep. Non-dipping of nocturnal blood pressure is common among people with type 2 diabetes (T2D) and hypertension and is associated with an increased cardiovascular risk. Our study aims to identify the pattern of nocturnal dipping of blood pressure in a random sample of patients.

Materials and Methods:

Prospective study of 94 hypertensive patients, hospitalized from the emergency department in our service, from January until December 2021. Ambulatory blood pressure monitoring (ABPM) was determined by using a device that takes blood pressure measurements over 24 hours, usually every 15 minutes during the daytime and every 30 minutes during sleep. Two comparison groups were established: patients with Diabetes Mellitus Type 2 (DM Group) and nondiabetic ones (ND group).

Results:

In a sample of 94 hypertensive patients, 31 were diabetic (33.3%) and 63 were non diabetic (66.6%). The following variables were studied: age 64± 11 years DG / NDG 67 ± 12 years (P: NS) and sex DG Males: 14 / Females: 17; NDG Males: 35 / Females: 28 (p: NS). We analyzed the need for antihypertensive therapy: 22 patients (20.6%) with 1 medicine, 40 patients (37.6%) with 2 medicines, 25 patients (23.5%) with 3 medicines and 7 (6.6%) with 4 medicine. Analyzing therapeutic families: ACE inhibitors 48% (51 patients), Angiotensin 2 receptor antagonists 27% (28 patients), Diuretics 55%(59 patients),Calcium channel blockers 23%(25 patients), AlfaBlockers 9%(9 patients), B-Blockers 10%(11 patients).

Analyzing the subgroup of diabetic patients: average HbA1c 7.5%. In diabetic patients nighttime blood pressure (nondipping pattern) was observed but without reaching statistical significance (P: 0.05).

Conclusions:

ABPM is a useful technique to assess the circadian rhythm of BP when we suspect white coat hypertension or episodic hypertension (e.g., pheochromocytoma), hypertension resistant to increasing use of medicines, and hypotensive symptoms while taking antihypertensive drugs. Nondipping has also been associated with faster progressions of micro and macrovascular complications in patients with diabetes mellitus. So, targeted antihypertensive therapy should be implemented in order to restore normal circadian BP in patients with T2D.

Biography:

Ergita Nelaj is an Assistant Professor at the University of Medicine in the Department of Internal Medicine. She is an Endocrinologist at Internal Medicine, UHC Tirana.

Animal Welfare in Diabetes Research: A Humane Endpoint Scoring System

Ana I. Faustino-Rocha[1,3] Rita Silva-Reis1,[1,2] Jéssica Silva,[1] Abigaël Valada,[1] Tiago Azevedo,[1] Lara Anjos,[1] Artur M. S. Silva,[2] Susana M. Cardoso[2] and Paula A. Oliveira [1]

[1]University of Trás-os-Montes and Alto Douro, Portugal
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Abstract:

Humane endpoints are increasingly being used in animal experiments to ensure compliance with ethical regulations, namely the 3Rs policy. This study aimed to develop a clear humane endpoint (HE) scoring system for a streptozotocin (STZ)-induced diabetes model in male Sprague-Dawley rats. The rats were divided into a control (n=8) and an induced (n=16) group, with the latter receiving 10% fructose in their drinking water for 14 consecutive days. Following intraperitoneal administration of STZ (40 mg/kg) or 0.1 M citrate buffer, respectively, the following parameters were evaluated and scored: body weight, body posture, hair/tail appearance, grooming, grimace scale, mental status, response to external stimuli, hydration status, stool appearance, convulsions, and response to abdominal palpation. If the sum of the scores reached four or more, the animal was sacrificed. Additionally, several nutritional parameters, such as Lee index, body weight index (BWI), and abdominal and thoracic perimeters, were registered.

Following eight weeks of experiments, no animal reached the HE score of four, and no deaths were recorded. No changes were observed in control animals. However, after fructose administration, induced animals showed dehydration (14/16). After STZ administration were observed lack of grooming (8/16), narrowing of the orbital area (1/16), curved posture (10/16), liquid (3/16), pasty diarrhea (1/16), and abdomen distention (1/16). The nutritional parameters were significantly lower in diabetic animals when compared with control ones ($p<0.01$). This research has demonstrated that the HE scoring system can be successfully implemented in an animal model of diabetes, while still adhering to the 3Rs policy and addressing animal welfare concerns.

Funding's:

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Biography:

Ana Faustino is a Professor at the Department of Zootechnics of the University of Evora and a Researcher at CITAB/UTAD. She holds a Master's in Veterinary Medicine and a European PhD in Veterinary Sciences. Animal models of cancer, tumoral angiogenesis and imaging are her main areas of interest. She has collaborated in several Financed Research projects. The results of her works were published in more than 250 publications in several formats. She received several prizes of scientific merit, and highlights and press honors. She has experience in supervising graduate and post-graduate students. She participated in several courses, workshops, international and national meetings. She is an editorial member of several scientific journals and a reviewer of more than 300 manuscripts. She is the Guest Editor of two special issues in Veterinary Animals and in Life.

Polycystic Ovary Syndrome & Type 2 Diabetes Mellitus

Aboubakr Elnashar

Benha university Hospital, Egypt

Abstract:

PCOS Is a lifelong syndrome. Long Term Morbidity of PCOS are: T2DM: (2- to 6-fold higher risk), metabolic syndrome, CVD, endometrial hyperplasia & cancer, gestational DM, offspring metabolic & hormonal profile disorders. The link between PCOS & T2D stems from the association of each condition with obesity &IR. Regular screening is recommended for the early identification of impaired glucose metabolism, particularly in overweight or obese or family history of T2DM. Prevention of T2DM in patients with IGT is primarily based on lifestyle changes. Metformin might be considered in selected cases.

Biography:

Aboubakr Elnashar is Professor at Benha university Hospital, Egypt. He is a President of Clinical Society of Obs & Gyn. He is an editor of Middle East Fertility Society Journal, Egyptian Fertility Sterility Journal, Benha Medical Journal. He also a Member of Egyptian fertility sterility society board. 37 international publications in: Lancet, Human Reproduction, British J Obs Gyn, Fertility Sterility, J Assist Reprod Genet, International J Gyn Obs, Acta Obstet Gynecol Scand, J Obstet Gynaecol. Speaker in international conferences: ESHRE (5 times), RCOG, European Congress of Obs Gyn, MEFS. 480 lectures on Slide share. International reviewer of ESHRE Guidelines: 1. PCOS 2. COS3. Female fertility preservation 4. Terminology of ectopic pregnancy.

TYPE II DIABETES IN MOROCCO: FOOD APPROACH AND HYGIENE OF LIFE

Maryem Arraji and Mohamed CHAHBOUNE

Hassan First University of Settat, Morocco

Abstract:

Diabetes is a chronic disease, constituting today a real public health issue on a global scale, it is one of the four priority non-communicable diseases identified by the World Health Organization (WHO). Its management requires not only diagnosis, treatment, biological monitoring, but also therapeutic education.The latter can only be effective if we have sufficient knowledge of the beliefs and dietary behaviors of these patients.

Aim:

Evaluate the general characteristics, beliefs and practices related to diabetes in type 2 diabetic patients (T2DM), while measuring knowledge, attitudes and even dietary practices in these patients, determining the main foods consumed, as well as measures of their lifestyle.Evaluer l'observance thérapeutique au traitement, avant et après l'intervention infirmière à notre population cible.

Study the factors leading to under-adherence to drug treatment, in said population, given that good adherence to diabetic treatment includes the patient's adherence to a healthy lifestyle including (a suitable diet, as well as a regular physical activity), self-assessment of blood sugar, foot care, and even adherence to medication.

Indeed, determining the factors associated with non-compliance allows public authorities and practitioners to identify, among patients, those at high risk and to intervene in order to promote their compliance.

1. World Health Organization. Adherence to long-term therapies: Evidence for action

Biography:

Maryem Arraji is an 27 years old, PHD student of Moroccan nationality, in the 2nd year of the doctoral cycle, belonging to the higher institute of health sciences, at the Hassan First university of Settat Morocco. She is working on type II diabetics in Morocco: Therapeutic observance, dietary approach and life hygiene, occupying the position of a primary education teacher.

Potential role of SGLT2i in patients with T2DM and Osteoarthritis

Bijay Patni

Shanti Wellness care, India

Background:

Type 2 diabetes mellitus (T2DM) and osteoarthritis (OA) are common diseases that frequently co-exist, along with overweight/obesity. T2DM has a pathogenic effect on OA through 2 major pathways involving oxidative stress and low-grade chronic inflammation resulting from chronic hyperglycemia and insulin resistance. T2DM is a risk factor for OA progression and has a negative impact on arthroplasty outcomes. Further research is needed to better understand whether diabetes control and prevention can modulate OA occurrence and progression. Mechanical impact of excess body weight on joints may explain lower limb OA, we sought to explore whether T2DM management and weight reduction is linked to improvement in clinical symptoms.

Objective:

A single center, prospective observational study to evaluate whether better glycemic management along with weight reduction improves the clinical symptoms i.e., pain associated with osteoarthritis in T2DM.

Methods:

After taking informed consent, 56 patients of T2DM with OA (48-Female,8-Male) were enrolled.

Patients' demographics: Mean age of T2DM patients with OA: 55 years (Male: 58 yrs., Female: 52 yrs.)

Average duration of T2D – 7.5 years
Average BMI :27.6 kg/m2
Mean baseline HbA1c – 8.2%

Patients (%) with other comorbid conditions: Hypertension (32%); Dyslipidemia (21%); Hypothyroidism (24%).

Patients (%) were also on DPPIV Inhibitors-62%, Metformin-98%, Sulfonylureas-41%, GLP1 RA-2%, α-glucosidase inhibitors-16%, Insulin-18%,and Thiazolidinediones: 4%

SGLT2 Inhibitors (not specific) were added on to the existing antidiabetic treatment regimen in all 56 enrolled patients and were followed up for 6 months.

Duration of study: 6 months from July 2020 to Dec 2020

Clinical parameters i.e., Paper based VAS score, HbA1c%, and BMI were measured in patients at baseline and at the end of 6 months follow up expressed as Mean±SD.

Statistical Analysis:

Paired T-test was used to compare the differences in mean value from baseline to 6 months and any P value < 0.05 was considered statistically significant. GraphPad Prism version 9 was used for analysis.

Biography:

Bijay Patni is a Consultant at Bijoy, Patni, Clinic, Kolkata. He is having specialty in Diabetology, and has working at Shanti Wellness Care.

Personal hygiene and sglt2i

Abhisekh Raha

Lumding Divisional Railway Hospital, India

Abstract:

Introduction:

Role of personal hygiene in preventing perineal infection arising out of sglt2i usage

Material:

30 T2DM patients of age group 40-55 years, who are uncontrolled on metformin and glimepiride of various strength and dosage schedule are divided into 2 groups of 15, and the two groups are named intervention and control group.

Both the group were given Dapagliflozin 10 mg for the first time.

Intervention group were taught about maintenance of personal hygiene and counselled for strict maintenance while control group were not counselled for personal hygiene maintenance.

Observations:

Boththe groups were followed for 4 monthsand it was found that mere washingthe perineal area with water only after every act of micturition in the interventional group leads to much lesser perineal infection compared to the control group.

Conclusion:

T2DM patients on Dapagliflozin (sglt2i) can prevent perineal infection with the proper maintenance of personal hygiene of the genital area.

Biography:

Abhisekh Raha presently working as a Divisional Medical Officer and Consultant Diabetologist at Indian Railway Health Services. He recently won 3rd prize for best presentation in RSSDI conference 2022 held at Chennai.

Insulin resistance in diabetes and cardiovascular disease: A future perspective

Souravh Bais, Renu kumara Rana and Nirmal Dongre

SAGE University, Indore, Madhya Pradesh, India

Abstract:

Cardiovascular disease (CVD) has been the major cause of death worldwide for many years. Comorbidities include obesity, altered lipid profiles, and insulin resistance are frequently linked to CVD. Insulin is a crucial hormone that regulates cellular metabolism in a variety of tissues throughout the human body. Insulin resistance is distinguished by problems in glucose absorption and oxidation, a reduction in glycogen synthesis, and, to a lesser extent, the capacity to control lipid oxidation. Free fatty acids appear to be the most common substrate for ATP generation in adult myocardium, according to the literature. The purpose of this study is to address the processes that link insulin resistance to the development of cardiovascular disease. New medicines aimed at reducing insulin resistance may help to reduce both CVD and the formation of atherosclerotic plaques.

What will audience learn from your presentation?

(Try to list 3-5 specific items)

· Future research is needed to understand the precise mechanism between insulin resistance and its progression to heart failure with a focus on new therapy development.

· This study will allow researchers and other scientists to target the specific biomarkers which effects the disease more specifically.

Biography of presenting author :

Souravh Bais, Working as Associate Professor in department of Pharmacology, SAGE University, Indore, India. He has more than 11 years of experience in teaching and research. He has published more than 60 papers in peer reviewed journals in both national and international journals. His areas of research are neurological disorders, Obesity and inflammatory disorders. He is acting as Academic Reviewer in Science Domain and Invited as reviewer in reputed publisher's like- Elsevier, Springer, Hindawi, Bentham and Wiley and reviewed more than 92 papers. He is a member British Pharmacological Society. Recently he is selected as "Bentham Ambassador" for the year 2019-20.

Astaxanthin and its role in the prevention of dyslipidemia and visceral adiposity. Studies in a diet-induced Metabolic Syndrome rodent model

María del Rosario Ferreira[1,2], M. Vargas[1] and M.E D´Alessandro[1,2]
[1]*University of Litoral. Santa Fe, Argentina*
[2]*National Scientific and Technical Research Council (CONICET), Argentina*

Abstract:

Westernized diet -characterized by the incorporation of energy-dense foods, saturated fats and simple sugars- represent a feature of the modern societies. These eating behaviors have contributed to the increased occurrence of metabolic risk factors such as overweight/obesity, dyslipidemia and other components of the so-called Metabolic Syndrome (MS).

It has recently been suggested that the antioxidant astaxanthin (ASTX) would have protective effects against metabolic risk factors. However, those few studies have focused on the effect of ASTX of marine origin. The present study evaluated the effect of ASTX from freshwater decapod crustaceans upon biometric parameters, visceral adiposity and serum lipid levels in an experimental model of MS induced by a high-sucrose diet (HSD) administration. Male Wistar rats (8-week old) were fed for 90 days with 1 of 4 randomly assigned experimental diets: a-Reference group (RD) received a standard commercial rodent diet, b- HSD group received a HSD, c- RD+ASTX group received a standard commercial rodent diet plus ASTX, d- HSD+ASTX group received a HSD plus ASTX. The rats were given (orally) the vehicle (sunflower oil) or ASTX (10 mg/ kg body weight). Compared with HSD-fed rats HSD+ASTX group had a lower body weight gain and both reduced abdominal circumference and visceral adiposity index. A reduction in epididymal adipocytes size and triglyceride (TG) content was also observed. Thoracic circumference, body mass index and Lee index were similar in all dietary groups.

Energy intake was lower at the middle of the experimental period. These changes were accompanied by lower TG and cholesterol serum levels. The results show that ASTX could be a potential strategy to prevent/attenuate the incidence of metabolic risk factors such as overweight/adiposity and dyslipidemia.

Biography:

María del Rosario Ferreira is a researcher at the National Scientific and Technical Research Council (CONICET) of Argentine in the Laboratory for the Study of Metabolic Diseases Related to Nutrition. She is working as a Faculty of Biochemistry and Biological Sciences, from the University of Litoral. Santa Fe. Argentine.

Insulin B peptide-MHC class II-specific chimeric antigen receptor-Tregs prevent autoimmune diabetes

Brian T. Fife

University of Minnesota Medical School, USA

Abstract:

Adoptive immunotherapy with Tregs is a promising approach for prevention or treatment of type 1 diabetes. Islet antigen-specific Tregs have more potent therapeutic effects than polyclonal cells, but their low frequency is a barrier for clinical application. To generate Tregs that recognize islet antigens, we engineered a chimeric antigen receptor (CAR) derived from a monoclonal antibody with specificity for the insulin B-chain 10-23 peptide presented in the context of the IAg7 MHC class II allele present in NOD mice. Peptide specificity of the resulting InsB-g7 CAR was confirmed by tetramer staining and T cell proliferation in response to recombinant or islet-derived peptide.

The InsB-g7 CAR re-directed NOD Treg specificity such that insulin B 10-23-peptide stimulation enhanced suppressive function, measured via reduction of proliferation and IL-2 production by BDC2.5 T cells and CD80 and CD86 expression on dendritic cells. Co-transfer of InsB-g7 CAR Tregs prevented adoptive transfer diabetes by BDC2.5 T cells in immunodeficient NOD mice. In wild type NOD mice, InsB-g7 CAR Tregs stably expressed Foxp3 and prevented spontaneous diabetes. These results show that engineering Treg specificity for islet antigens using a T cell receptor-like CAR is a promising new therapeutic approach for the prevention of autoimmune diabetes.

Biography:

Brian Fife is a Professor of Medicine within the Division of Rheumatic and Autoimmune Diseases at the University of Minnesota Medical School. He joined the division in February 2008. He is also a member of the interdisciplinary Center for Immunology and Director of the Center for Autoimmune Disease Research (CADRe). Within the Center for Immunology, he serves as the Imaging Core Director using advanced imaging techniques in his own research program. In December 2001, he done his graduat from Northwestern University Medical School. It is there that he initiated his research interests in autoimmune mediated diseases.

Following graduation, he joined the Diabetes Center in the Department of Medicine at the University of California at San Francisco for postdoctoral research with Dr. Jeffrey Bluestone. The major focus of his research program is the restoration of immunological self-tolerance for treatment of autoimmunity. He interested in understanding immuological tolerance during Type 1 diabetes and focuses his efforts on understanding checkpoint blockade and the role for inhibitory pathways such as CTLA-4 and PD-1. Most recently his work has focused on chimeric antigen receptor T cells (CAR T cells) for novel treatment approaches for autoimmunity.

SCIENTIFIC ABSTRACTS

DAY 2

DIABETES MEET
March 20-21 VIRTUAL EVENT 2023

Virtual Meet

3rd International Conference on

DIABETES, ENDOCRINOLOGY and OBESITY

March 20-21, 2023

Potential molecular mechanisms underlying the action of saffron against renal ischemia/reperfusion in non-diabetic/diabetic mice

Ramona D'Amico, Rosalba Siracusa and Daniela Impellizzeri
University of Messina, Italy

Abstract:

Renal ischemia/reperfusion injury is a disorder associated with high mortality and morbidity. Diabetes condition markedly increases renal sensitivity to IR damage and represents one of the major risk factors that worsen kidney injury. Given the increased incidence of diabetes, extensive studies are needed to understand the pathophysiological mechanisms underlying RIRI in diabetic conditions. Therefore, this study was designed to evaluate whether natural treatment with Saffron may enhance renal antioxidant capacity in vitro and alleviate RIRI in diabetes condition in vivo. Our results clearly demonstrated that saffron was able to reduce H2O2-induced intracellular ROS generation in Vero cell cultures. In addition, Saffron attenuated kidney dysfunction and histological damage induced by RIRI both in non-diabetic and diabetic mice, modulating the WNT pathway activation, oxidative stress and the apoptotic process. These results suggest that Saffron could be represent a useful strategy for pathological events associated to RIRI and diabetic comorbidities.

Biography:

Ramona D'Amico has completed PhD in Applied Biology and Experimental Medicine in 2020 at the University of Messina. She worked as researcher for studies on preclinical pharmacology activities (in vitro primary cultures and in vivo experimental models), for the Epitech Group. Additionally, she worked at Health Science Research Centre, University of Roehampton in London (UK) and now she performs postdoctoral studies at University of Messina. She has published more than 60 articles in reputed journals about biochemistry, oxidative stress and pharmacology. She has a knowledge about animal's research, biochemical and molecular biology, immune histo chemical and immunofluorescence analysis.

Molecular targets for anti-oxidative protection of Açaí berry against diabetes myocardial ischemia/reperfusion injury

Rosalba Siracusa, Ramona D'Amico and Daniela Impellizzeri

University of Messina, Italy

Abstract:

Myocardial ischemia/reperfusion injury (MIRI) is the principal cause of death, happens after prolonged obstruction of the coronary arteries. Diabetes represents one of the main factors that aggravates myocardial injury Restoration of blood flow is the first intervention against heart attack, although the process of reper-fusion could cause additional injury, such as the overproduction of reacting oxygen species (ROS). In recent years, Açaí berry has gained international attention as a functional food due to its antioxidant and anti-inflammatory proprieties; not only, this fruit has shown glucose-lowering effects. Therefore, this study was designed to evaluate the cardioprotective effects of Açaí berry on the inflammatory and oxidative re-sponse associated with diabetes MIRI.

Diabetes was induced in rats by a single 60 mg/kg intravenous inocu-lation of streptozotocin and left to develop for 60 days. MIRI was induced by occlusion of the left anterior descending coronary artery for 30 minutes followed by 2 hours of reperfusion. Açaí (200mg/kg) was administered 5 minutes before the end of ischemia and 1 hours after reperfusion. In this study, we clearly demonstrated that Açaí treatment was able to decrease myocardial markers damage, infarct size and apoptotic process. Moreover, Açaí administrations reduce inflammatory and oxidative response, modulating Nf-kB and Nrf2 pathways. These results suggest that Açai Berry supplementation could be represent a useful strategy for pathological events associated to MIRI.

Biography:

Rosalba Siracusa is PhD in Applied Biology and Experimental Medicine at the University of Messina. She has a Specialization in Clinical Pathology and Clinical Biochemistry. He graduated in Biology at the University of Messina in 2013. She works at the University of Messina from 2014 and currently she is a Senior Research Scientist in Clinical Biochemistry and Molecular Biology. Dr. Siracusa has collaborated with more national and international experts. She has completed her "Visiting Scientist" at Beth Israel Deaconess Medical Center/Harvard Medical School, Boston, MA, USA. She has published more than 140 articles in reputed journals on the biochemical evaluation of food science and nutrition.

Consumption of Cashew (Anacardium occidentale L.) Nuts Counteracts Oxidative Stress and Tissue Inflammation in a Condition of mild Hyperhomocysteinemia in Rat

Daniela Impellizzeri, Rosalba Siracusa and Ramona D'Amico
University of Messina, Italy

Abstract:

Hyperhomocysteinemia (HHcy) is a disorder of methionine metabolism, leading to different inflammatory diseases. Recent studies have increasingly been showing interactions between plasma Hc levels and type 2 diabetes (T2DM) and its vascular complications. Homocysteine (Hcy) may be further metabolized by the sulphuration pathway to cysteine, or remethylated using either methyltetrahydrofolate or betaine. Experimental animal models of induced HHcy enable further investigation of the relationships between Hcy and different inflammatory disorders, including the possible actions underlying these relations. One of the mechanisms that are supposed to be involved in the pathogenesis of various damages caused by HHcy is oxidative stress. HHcy is more likely to be a disease involving the dysfunction of various organs, still little studied, such as kidney, liver or gut.

Several observations indicate that the calibrated assumption of correct doses of vitamins such folate, vitamin B6, vitamin B12, and betaine may control HHCys-related conditions. Daily intake of nuts is acclaimed as a part of a healthy diet since they contain proteins and beneficial fatty acids together with essential nutrients. Consumption of natural antioxidants, such as polyphenol-rich foods, fresh fruits, and vegetables, could neutralize the oxidative degradation of ROS. Based on this, the aim of work was to evaluate the anti-inflammatory and antioxidant effects of cashew nuts in a condition of HHcy induced by oral methionine administration and examine the possible pathways involved.

In particular, in HHcy rats, cashew nuts (100 mg/kg orally) was able to counteract clinical biochemical changes, oxidative and nitrosative stress, reduced antioxidant enzyme levels, lipid peroxidation, proinflammatory cytokines release as well as histological tissue injuries and apoptosis in kidney, colon and liver. Thus, the results suggested that consumption of cashew nuts may be beneficial for the treatment of inflammatory conditions associated to HHcy.

Biography:

Daniela Impellizzeri did her Master's degree in Biological Sciences, PhD in "Experimental Medicine". She is working as an Associate Professor in Clinical Biochemistry and Clinical Molecular Biology at Messina University, Dpt of Chemical, Biological, Pharmaceutical and Environmental Sciences. She has an important research background in the fields of inflammation, neuroinflammation, oxidative stress, pain, immunity in specific area of biochemistry, pharmacology and neuroscience and nutrition.

Using GH-Method: Math-physical medicine (MPM) to Analyze Metabolism and Improve Health Conditions

Gerald C. Hsu
eclaireMD Foundation, USA

Abstract:

Introduction of Research:

The author spent 8.5 years and 23,000 hours to research his own chronic disease conditions. Using GH-Method: math-physical medicine (MPM) approach, he developed a mathematical metabolism model to evaluate and improve his overall health conditions.

Method of Research:

- The author utilized mathematics, physics, engineering modeling, and computer science tools, including big data analytics and artificial intelligence, to conduct his research.
- He applied concepts from topology and finite element method to develop a mathematical metabolism model and 4 prediction tools for weight, FPG, PPG and HbA1C. This metabolism model includes: 4 outputs of weight, glucose, blood pressure, lipids, and 6 inputs of food, water, exercise, sleep, stress, and routine life pattern. In total, this system has 10 categories with ~500 elements. After developing the mathematical modeling and software program, he further collected and processed ~1.5 million data to analyze his health condition

Results of Research:

- He defined two new terms known as the Metabolism Index (MI) and General Health Status Unit (GHSU). The "health state" is expressed as the "break-even" line which is 73.5%; above this percentage is regarded "unhealthy" and below the break-even line is regarded "healthy".
- The attached Figure of MI & GHSU shows that he was "unhealthy" before 2013 (about 80% -110%). The curve went through a sharp decline in 2014 due to knowledge he gained through his research and his better understanding of "metabolism".
- After 2015, he was quite "healthy" (about 60%-70%). As of 12/31/2017 and 12/31/2018, his daily MI was 57.4% & 53.6% respectively and GHSU was 55.7%. & 58.6% respectively.

Biography:

Gerald C. Hsu received an honorable PhD in mathematics and majored in engineering at MIT. He attended different universities over 17 years and studied seven academic disciplines. He has spent 20,000 hours in T2D research. First, he studied six metabolic diseases and food nutrition during 2010-2013, then conducted research during 2014-2018. His approach is "math-physics and quantitative medicine" based on mathematics, physics, engineering modeling, signal processing, computer science, big data analytics, statistics, machine learning, and AI. His main focus is on preventive medicine using prediction tools. He believes that the better the prediction, the more control you have.

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