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Scientific Meetings

9TH GLOBAL SUMMIT ON

DIABETES & ENDOCRINOLOGY

AUGUST 14-16, 2024

Venue:
IntercityHotel Zurich Airport, Flughofstrasse 63 | 8153
Rumlang, Switzerland

Scientific Program

08:30–08:45: Registrations

08:45–09:00: Opening Ceremony

DAY 1

AUGUST, 14 2024

Keynote Presentation

09:00-09:40	
Dian True Community Education & Wellness Partners, USA	Title: Diabetes Eye Care in Pregnancy

09:40-10:20	
Paul Aoun American Hospital Dubai, United Arab Emirates	Title: Diabetes Care Model: By Changing Nothing, Nothing Will Change

Session Introduction

Tracks

Diabetes Research in Clinical Practice | Epidemiology / Genetics | Epidemiology and Public health | Diabetes, Endocrinology and obesity | Behavioural Medicine, Clinical Nutrition | Education, and Exercise | Biochemistry | Advanced in Diabetes Care

Session Chair: Joachman Neumann, Martin–Luther–University Halle–Wittenberg, Germany

Group Photo | Coffee Break 10:20–10:40 @ Foyer

10:40-11:05	
Sanam Lathief Mount Auburn Hospital/Harvard Medical School, USA	Title: SGLT–2 Inhibitors, 2024 Update

11:05-11:30	
Joachman Neumann Martin–Luther–University Halle–Wittenberg, Germany	Title: Positive inotropic effects of retatrutide in the isolated human atrium.

11:30-11:55	
Patrick T. Fueger Beckman Research Institute of City of Hope,USA	Title: Preventing MASLD/MASH progression by deleting hepatic Mig6
11:55-12:20	
Arwa Alageel King Saud Univesrity, Saudi Arabia	Title: Investigating the role of Non–exonic variants in CALPAIN 10 gene in Saudi patients diagnosed with polycystic ovarian syndrome (PCOS).
	Lunch Break 12:20–13:20 @ Foyer
13:20-13:45	
Warles Charles Lwabukuna Hubert Kairuki Memorial University, Tanzania	Title: Profile of fasting blood glucose among secondary school students in Dar Es Salaam Region: A cross–sectional study
13:45-14:10	
Arbind Kumar AIIMS RAEBRELI, India	Title: A Pilot Study: To Compare the Impact of Early and Late Diagnosis of Type 2 Diabetes on Cognitive Function
14:10-14:35	
Dian True Community Education & Wellness Partners, USA	Title: Connecting The Dots Coordination of Care Management Programs
14:35 -14:50	
Aljohrah Aldubikhi Saudi Electronic University, Saudi Arabia	Title:The Effect of Health Educators on Diabetes Control
	Networking & Refreshment Break 14:50 –15:10

Poster Presentations

15:40-16:05	
Mosleh Abomughaid University of Bisha, Saudi Arabia	Title: Phytochemicals profiling, in vitro and in vivo antidiabetic activity, and in silico studies on Ajuga iva (L.) Schreb.: A comprehensive approach
16:05-16:30	
Suhaila Abdalkarim Ali Fadol Jazan university, Saudi Arabia	Title: Association of Anxiety and Depressive Symptoms and Treatment Adherence Among Patients With Type 2 Diabetes Mellitus in Jazan, Saudi Arabia: A Cross–Sectional Study

Panel Discussion & Certificate Falicitation

Day –1 Ends

DAY 2

AUGUST, 15 2024

Zoom Meeting (GMT+1) Time in United Kingdom

09:00-09:20	
Donghong Gaoa University at Albany,USA	Title: Modification effects of ultrafine particles on the association between ambient extreme cold exposure and diabetes hospitalizations in winter and transitional months
09:20-09:40	
Kaisun Nesa Lesa Khulna University, Bangladesh	Title: Functional Food for Type 2 Diabetes Mellitus: Okara Noodles
09:40-10:00	
Meagan Horne Houston Methodist Hospital, USA	Title: Literature Review of Food Insecurity and Diabetes in the United States
10:00-10:20	
Yuosra A.Ali Mosul of University, Iraq	Title:Evaluation of the use of vegetable oils used in the manufacture and production of types of potato chips in the city of Mosul
10:20-10:40	
Shaima Albeloushi Dasman Diabetes Institute, Kuwait	Title: Comparative Effects of Fish Oil and Cocoa Butter Based High–Fat–High–Sucrose Diets on IL–1β Expression in Pancreatic β–cells
10:40-11:00	
Marilena Stoian, Carol Davila University of Medicine, Romania	Title: Nephrotic Syndrome in patients with Diabetes Mellitus is not associated with Diabetic Nephropathy
11:00-11:20	
Rosa G. Zamarripa–Jáuregui Instituto Mexicano del Seguro Social, Mexico	Title: Marine–Lenhart Syndrome: Case Report
11:20-11:40	
Aida Kabibulatova Nazarbayev University School of Medicine, Kazakhstan	Title: Vitamin D receptor gene polymorphism in patients with diabetic kidney disease on renal replacement therapy
11:40-12:00	
Nazir Ahmad Universitas Gadjah, Indonesia	Title: Okra (Abelmoschus esculentus) Protects against Diabetes Mellitus and Cognitive Decline

12:00-12:20	
Abdul Hameed Ziauddin University, Pakistan	Title: Hispidulin is an insulin secretagogue targeting the AKAP9–mediated PKA signaling pathway.

12:20-12:40	
Giuseppina Lagana University of Messina, Italy	Title: Influence of catechins and proanthocyanidins on insulin resistance, diabetes and related diseases

Panel Discussion

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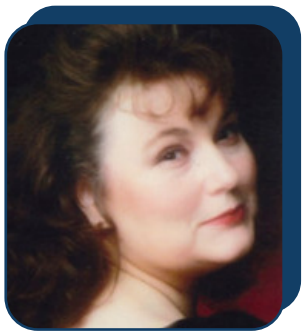
9th Global Summit on

DIABETES & ENDOCRINOLOGY

August 14-16, 2024 | Zurich, Switzerland

HYBRID EVENT

KEYNOTE PRESENTATIONS
DAY 1



Dian True
Community Education & Wellness Partners, USA

Diabetes Eye Care in Pregnancy

Guiding Principle

There is an increasing prevalence of diabetes not only in the United States but also in the world, along with its associated cohort of cardiovascular diseases, with resulting costly compromises to all health care systems. It has become one of the main concerns in healthcare across the US and Wyoming. Previous studies suggest that the prevalence of obesity and diabetes is higher in rural areas compared to urban communities. Educating people on how to prevent diabetes may significantly reduce the risk for people who have prediabetes or are at risk for developing type 2 diabetes including adults and now our youth.

Trends in Prevalence of Diagnosed Diabetes in the World[1]

According to the IDF Diabetes Atlas (2021) reports that 10.5% of the adult population (20-79 years) has diabetes, with almost half unaware that they are living with the condition. By 2045, IDF projections show that 1 in 8 adults, approximately 783 million, will be living with diabetes, an increase of 46%.

Trends in Prevalence of Diagnosed Diabetes in the United States[2]

- **Total:** 38.4 million people have diabetes (11.6% of the US population)
- **Diagnosed:** 29.7 million people, including 29.4 million adults
- **Undiagnosed:** 8.7 million people (22.8% of adults are undiagnosed)

Prediabetes[2]

- **Total:** 97.6 million people aged 18 years or older have prediabetes (38.0% of the adult US population)
- **65 years or older:** 27.2 million people aged 65 years or older (48.8%) have prediabetes.

Purpose of this abstract

To develop a mechanism that supports the awareness and education related to the care of women with diabetes during pregnancy.

To determine a nationwide and statewide leadership group to inform communities about the resources related to diabetes eye care in women who are or may become pregnant, is critical to maintain healthy outcomes. Stepping up as a community agent to facilitate an active networking collaborative that would provide professional and community based advanced eye care education.

To implement strategies to assist women with diabetes reach their optimum clinical goals. As an example, in Wyoming as a rural and frontier state by its nature has several unique barriers. One of the main barriers is that Wyoming is the 10th largest state in the US yet has the smallest population. Therefore, it does not have an adequate workforce resource to support rural educational staffing in every community. Building statewide resource and referral source was essential.

Background

The implementation of an established and permanent online based site that is reachable through calling, texting or in person such as our statewide 2117 organization, which provides multi-directional referral service that now covers all 23 counties in Wyoming. Providing a central source to access essential health care and specialty health care requirements and needs.

Discussion

The global prevalence of diabetic retinopathy (DR)1 has been reported in pregnant patients with type 1- **52.3%** and type 2 diabetes - **6.1%**.Women who become pregnant and have diabetes or develop diabetes during their pregnancy are associated with increased risk of development and progression of diabetic retinopathy (DR). Although pregnancy does not have any long-term effect on DR, progression of retinopathy changes occur in 50% -70% of all cases.

As a clinical educator and professor, we have the unique opportunity to provide additional education to our future clinicians, nursing and support partners; thereby increasing the awareness of the risks associated with diabetes and pregnancy; to encourage careful pre- pregnancy planning when possible and essential screening upon confirmation. The utilization of a collaborative approach with our primary care optometrist and ophthalmologist to ensure positive outcomes and lessen the risk of long- term complications related to the eyes.

Reducing Controllable Risks[3]

- Prenatal planning for women with a diagnosis of diabetes or family history of gestational diabetes.
- Controlling blood pressure, through healthy eating and moderate exercise or under medical care.
- Monitoring and maintaining glycemic control.
- Not smoking or using other tobacco products including vaping.

Independent Risk Factors

- Pregnancy4 is an independent risk for women with diabetes, especially if not well controlled.
- Obesity
- Increased BMI
- Hypertension
- Duration of disease
- Lack of glycemic control

Screening

The American Diabetes Association along with the American Ophthalmology Association recommends extra eye screening tests if you already have type 1 or type 2 diabetes before becoming pregnant.

Eye screening is an integral part of managing diabetes, diabetic retinopathy is treatable, especially if found early. Pregnancy screening is critical for women with type 1, type 2 diabetes, and includes the 3rd type of diabetes called gestational diabetes.

Conclusion

A transparent systematic approach to diabetes eye care for women with diabetes who becomes pregnant, reduces the potential risk of long-term complications including blindness and is the key to improve health outcomes. Readily available community resources that support these women, will allow women to proactively seek care within their geographic area or defined health care systems.

Paul Aoun
American Hospital Dubai. Dubai, UAE

Topic: Diabetes Care Model: By Changing Nothing, Nothing Will Change

Diabetes is a complex disease that has taken a toll on the globe through various medical consequences and with significant financial ramifications. An estimated half a billion adults worldwide have diabetes and that number is expected to double by 2050. To curb the burden of the disease, the bulk of the resources have been channeled towards modifying downstream consequences and/or introducing costly therapeutic interventions. While the scientific and technological breakthroughs stemming from the current system have helped reduce complications and improved the lives of many, the present model of care would be well-complemented by more emphasis on mitigating upstream causal or exacerbating factors. These include but not limited to, food and medical systems, psychosocial challenges, eating disorders, and behavioral elements. Furthermore, to shine a direly-needed light of hope, the International Diabetes Federation (IDF) maintains that up to 50% of type 2 diabetes cases are preventable. Despite this window of opportunity, to many patients with prediabetes or diabetes, these conditions are progressive and irreversible "life-sentences." Many act surprised or in disbelief when imparted with the preventability fact or if told they might be able to improve their glycemic control, or in certain cases even get their prediabetes/diabetes into remission, via sustainable lifestyle changes. Although education could certainly raise awareness, serious prevention programs and policies are to be formulated along with clear strategies to implement them on a large scale. This presentation will highlight potential opportunities for the formation of an interdisciplinary model of care involving behavioral medicine, eating disorders experts, dietitians, and clinicians that collectively could empower patients with more knowledge and insight to favorably alter their perception of diabetes leading to wider adoption of preventive standards and to improved overall care.

Biography:

Dr. Paul Aoun completed his medical and graduate studies at the University of North Texas Health Science Center in Texas, USA. He received his internal medicine training at Johns Hopkins-Sinai Hopital Program in Internal Medicine in Baltimore, Maryland and completed his fellowship in Endocrinology and Metabolism at Mayo Clinic in Rochester, Minnesota. He served as an Affiliate Assistant Professor at University of Miami while practicing endocrinology in Palm Beach, Florida. In 2018, he reloacted to the UAE for an endocrinology consultant tenure at the American Hospital Dubai. Dr. Aoun has several publications in various medical journals and has held multiplte leadership and administrative roles.

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HYBRID EVENT

SPEAKER PRESENTATIONS
DAY 1

Sanam Lathief
Mount Auburn Hospital, Harvard Medical School, Boston, USA

SGLT-2 Inhibitors, 2024 Update

Sodium glucose co-transporter inhibitors (SGLT2-I) are a novel class of anti-diabetic drugs which lower plasma glucose by inhibiting the SGLT-2 receptors expressed in the renal proximal convoluted tubules thereby reducing reabsorption of filtered glucose, decreasing the renal threshold for glucose reabsorption, and promoting glucosuria. Between 2012 and 2015, the European Medicine Agency (EMA) and the US Food and Drug Administration (FDA) approved three SGLT2is, dapagliflozin, canagliflozin, and empagliflozin, for reducing plasma glucose in persons with T2DM.

Early placebo-controlled trials with these agents showed that in appropriate doses they lowered HgbA1c by an absolute amount of around 0.6%, caused moderate reductions in body weight and blood pressure, and were generally well tolerated. They were considered to be reasonably effective second tier anti-diabetic agents and were usually added to metformin or a sulfonylurea.

Since that initial approval, rigorous cardiovascular trials have shown that these drugs have a beneficial impact on 3-point MACE (Major Adverse Cardiovascular Events). Specifically, they lower reduce the development and progression of heart failure and prolong life in patients with and without Type 2 Diabetes Mellitus (T2DM) and reduce cardiovascular mortality. They are beneficial in management of heart failure in patients with both preserved and reduced ejection fraction.

In addition, SGLT2 inhibitors slow the development of end-stage kidney disease in patients with chronic kidney disease regardless of diabetes status.

Since the initial approvals, many more SGLT-2 Inhibitors have been developed and approved.

The main side effects include risk of genetic mycotic infections, volume depletion and ketosis. Bone loss has been observed with Canagliflozin and is not a class effect.

This talk presents an overview of the different drugs, mechanism of action, physiology, side effects, cardiorenal impact and current guidelines.

Overview:

1. History, development and Types of SGLT2- Inhibitors
2. Mechanism of Action and Side Effects
3. Cardio Renal Impact and Current Guidelines

Biography:

Dr. Sanam Lathief is an Endocrinologist and Diabetes specialist at Mount Auburn Hospital, Cambridge, USA where she provides ambulatory endocrine care in the office and inpatient endocrine and diabetes consultative services. She was appointed Instructor in Medicine at Harvard Medical School in Boston, USA and Lecturer at the Massachusetts Institute of Technology (MIT) in the combined Harvard- MIT Health Sciences Program.

She received her medical degree from Kasturba Medical College, India, completed her residency in Internal Medicine at Yale New Haven Hospital in New Haven, Connecticut and her fellowship in Endocrinology, Diabetes and Metabolism at Dartmouth Hitchcock Medical Center, Lebanon, New Hampshire, USA. She subsequently practiced in Providence, Rhode Island and was appointed Clinical Assistant Professor of Medicine at the Warren Alpert Medical School of Brown University where she received Certificates of Recognition for Exemplary Teaching in the Endocrine sciences in 2019 and 2020.

Joachman Neumann
Martin-Luther-University Halle-Wittenberg, Germany

Positive inotropic effects of retatrutide in the isolated human atrium

Retatrutide (LY3437943), a peptide, binds to the glucagon receptor (GCGR), the glucose-dependent insulinotropic polypeptide (GIP) receptor (GIPR) and the glucagon-like peptide-1 receptor (GLP-1R). We tested the hypothesis that retatrutide increases force of contraction (FOC) in human right atrial preparations (HAP). HAP were obtained during open heart surgery in adult patients who suffered from severe coronary heart disease. For comparison, we studied paced (1 Hz) left atrial preparations (LA) or spontaneously beating right atrial preparations (RA) from wild type mice. We noted that cumulatively applied retatrutide starting at 10 nM (up to 100 nM the highest concentration tested) elevated FOC in HAP in a concentration- and time-dependent manner (n=5, $p<0.05$). These positive inotropic effects (PIEs) of retatrutide were diminished by a GLP-1R antagonist, by a glucagon receptor antagonist and by a GIP antagonist. In the additional presence of the phosphodiesterase III inhibitor cilostamide (1 µM), retatrutide was more effective to increase FOC in HAP. In isolated mouse RA, retatrutide starting at 1 nM exerted a positive chronotropic effect. In LA, in the presence but not in the absence of 0.1 µM rolipram, a phosphodiesterase IV inhibitor, 100 nM retatrutide had a PIE. Hence, retatrutide excites GCGR, GIPR and GLP-1R and enlarge thereby FOC in HAP and beating rate in RA.

Biography:

Prof. Dr. med. Dr. h. c. Joachim Neumann has completed 1981 his Board certification as a pharmacist at the University of Munich and 1986 his Board certification as a physician at the University of Hamburg. Since 2004 he is the director of Institute for Pharmacology and Toxicology at the Medical Faculty of the Martin-Luther-University Halle-Wittenberg. He has published more than 200 original papers, more than 40 reviews and more 480 abstracts in reputed journals.

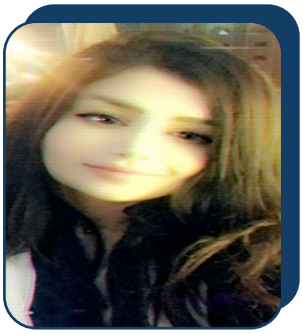
Patrick T. Fueger
Beckman Research Institute of City of Hope, CA, USA

Preventing MASLD/MASH progression by deleting hepatic Mig6

Up to 70% of people with diabetes have metabolic dysfunction-associated steatotic liver disease (MASLD), which can progress to metabolic dysfunction-associated steatohepatitis (MASH) - both of which, if left untreated, can progress to cirrhosis and hepatocellular carcinoma. The strongest risk factor for progression of MASLD to MASH is insulin resistance. Previous work in our lab identified that deletion of the adaptor protein Mig6 in the liver (LKO) improves glucose tolerance and insulin action during insulin clamps in diet-induced obese mice. Mig6 is an endogenous feedback inhibitor of epidermal growth factor receptor activation (EGFR) and regulates cellular repair and survival. Thus, we sought to elucidate the extent to which loss of Mig6 modulates the progression of MASLD. We hypothesized that hepatic Mig6 deletion improves whole-body glucose homeostasis and protects against MASLD-mediated liver damage. LKO mice and matched, control littermates (CON) were fed a MASH or a low-fat-matched diet for up to 40 weeks. Body weights and composition analysis, glucose and insulin tolerance tests, and hepatic histological analysis were performed throughout the study. Compared to MASH-fed CON mice, MASH-fed LKO mice had lower body weights starting at 10 weeks and persisting throughout due to decreases in fat, but not lean, mass. Oral glucose tolerance was significantly improved in MASH-fed LKO mice. Lastly, histological analysis revealed MASH-fed LKO mice had preserved hepatic lipid zonation and blunted levels of circulating alanine aminotransferase compared to MASH-fed CON, indicating less hepatic damage in LKO mice. These results suggest that liver-specific loss of Mig6 improves whole-body glucose handling, which in turn ameliorates hepatic damage during MASLD progression. In conclusion, Mig6 prevents, or at least delays, the progression of MASLD, which may reveal a new therapeutic area for the prevention and treatment of MASH.

Biography:

Patrick Fueger was awarded his PhD from Vanderbilt University and completed a postdoctoral fellowship at Duke University. He is an Associate Professor in the Department of Molecular and Cellular Endocrinology in the Arthur Riggs Diabetes & Metabolism Research Institute and Director of the Comprehensive Metabolic Phenotyping Core at the City of Hope. He has published more than 60 papers in reputed journals, and his work has been funded by the JDRF, American Heart Association, and National Institutes of Health.



Arwa Alageel
King Saud University, Saudi Arabia

investigating the role of Non-exonic variants in CALPAIN 10 gene in Saudi patients diagnosed with polycystic ovarian syndrome (PCOS).

Polycystic ovary syndrome (PCOS) is considered a as prevalent endocrine disorders in the reproductive aged women. Nondiabetic women with PCOS have been shown to have insulin resistance and insulin secretion abnormalities. Calpain 10 (CALP10) gene was documented as one of the biomarkers for Type 2 Diabetes Mellitus as well as for PCOS. Five different single nucleotide polymorphisms (SNPs); UCSNP-19 (rs3842570), UCSNP-43 (rs3792267), UCSNP-44 (rs2975760), UCSNP-56 (rs2975762) and UCSNP-63 (rs5030952) have been invetigated the relation with these functional SNPs may play a role in the developing PCOS.

OBJECTIVE: this study aims to explore the five SNPs present in CALP10 gene and thier molecular roles in PCOS women.

METHODOLOGY: In this case-control study, 90 PCOS and 90 non-PCOS women were selected based on Rotterdam (PCOS women) and non-Rotterdam (non-PCOS women) criteria. The collected 2ml of serum blood was used for testing the different biochemical parameters and 2ml of EDTA was used for studying SNPs present in CALP10 gene via DNA isolation, PCR and Sanger sequencing analysis. Based on generated data from both cases and controls, different biochemical and 5 SNPs data was applied for different statistical analysis.

RESULTS: Different genetic models, genotype and allele frequencies showed the association ($p<0.05$) in UCSNP-19 (rs3842570), UCSNP-44 (rs2975760), UCSNP-56 (rs2975762) and UCSNP-63 (rs5030952) SNPs in PCOS women and UCSNP-43 (rs3792267) had no role in any form ($p>0.05$). Additionally, multiple logistic regression model showed strong association with FBG ($p<0.001$) and ANOVA analysis showed association with FSH ($p=0.0001$), TT ($p=0.01$), FI ($p=0.002$), TG ($p=0.01$), FBG ($p=0.001$), FI ($p=0.004$), FSH ($p=0.02$) and LDLc ($p=0.04$) levels in SNPs present in CALP10 gene. Haplotype and Diplotype analysis also showed association with the studied SNPs in PCOS women ($p<0.05$). linkage disequilibrium analysis showed the connection between the SNPs and PCOS women ($p<0.05$). The GMDR analysis in this study the best gene-gene interaction was obtained among the studied 5 SNPs in CALP10 gene. However, dendogram and graphical depletion models was not showed the strong association among studied SNPs in PCOS women.

CONCLUSION: this study highlights the molecular relationship between rs3842570, rs3792267, rs2975760, rs2975762, rs5030952 SNPs studies in CALP10 gene and PCOS women. . Our study did not find a direct link, however, it did have an effect on glucose measures such as FBG and FI in PCOS women.

Biography:

Dr. Arwa Alageel has completed her PhD in ovarian ageing and Reproductive genetics in women health and reproductive, University of Oxford, UK. She has worked as assistant professor of Assisted Reproductive technologies, infertility and Reproductive genetics at King Saud university. She has published many papers in reputed journals and has been serving as a consultant in Assisted Reproductive Technologies genetics and Clinical embryology.

Warles Charles Lwabukuna
Hubert Kairuki Memorial University, Tanzania

Profile of fasting blood glucose among secondary school students in Dar Es Salaam Region: A cross-sectional study

Introduction: Of recent eras, there has been a dramatic increase in type 2 diabetes mellitus among children and adolescents. Female gender, childhood hypertension, overweight and obesity have been reported as the main risk factors for pre-diabetes and diabetes among children and adolescents. Screening children and adolescents for type 2 diabetes mellitus helps earlier detection and interventions for the disease.

Objective: The aim of this study was to determine the profile of fasting blood glucose among secondary school students in Dar es Salaam.

Methods: This was a descriptive cross-sectional study among secondary schools in Dar es Salaam. Structured questionnaires were used to obtain demographic information. Anthropometric measurements were taken using standard methods. Fasting blood samples were collected for blood glucose. The American Diabetic Association and International Diabetic Federation criteria were utilized.

Results: A total of 217 participants were enrolled; 32% (69) were males and 68% (148) were females, 75% (162) were in 14-17years age group. Students from private and public schools were 52% (113) and 48% (104) respectively. Fasting blood glucose levels were distributed as follows; normal level 87 %(189), impaired/ pre- diabetes 11.5 %(25) and diabetes 1.4% (3). Impaired fasting blood glucose was significantly higher among students aged 18-19; 16.4% (9) with p-value 0.044. Similarly, diabetes was significantly higher among students within age group of 18-19 years 3.6% (2) than 14-17 age group counterparts.

Prevalence of central obesity was 22% (48) which was higher among pre-diabetes 46% (22) and diabetes 6.1%(3) groups, and the difference was statistically significant (p value <0.001).

Conclusion: Normal fasting blood glucose among secondary school students in Dar es Salaam is 6.7 fold of the abnormal with pre-diabetes being the commonest abnormality which is significantly prevalent among private schools and elder students with central obesity.

Keywords: fasting blood glucose; pre-diabetes, diabetes, secondary schools; students

Arbind Kumar
AIIMS Raebreli, India

A Pilot Study: To Compare the Impact of Early and Late Diagnosis of Type 2 Diabetes on Cognitive Function

Introduction: Type 2 diabetes mellitus (T2DM) is known to be associated with cognitive impairment, but the Impact of the timing of diagnosis on cognitive function remains unclear.

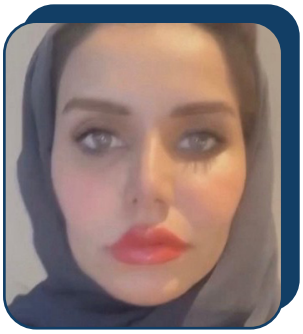
Objective: This pilot project aims to assess the cognitive function of people diagnosed with T2DM at an early vs. late stage. The study will examine several cognitive domains, such as, attention, memory, executive function, visuospatial skills, and sensorimotor abilities,

Methods: We recruited 80 adults diagnosed with T2DM, evenly split into two groups - one with early diagnosis (≤5 years) (n=40) and the other with late diagnosis (≥ 6 years) (n=40) depending on when their disease was identified. Both groups underwent evaluation for demographic and clinical factors. Cognitive function was assessed using Mini-Mental State Examination (MMSE), Montreal Cognitive Assessment (MoCA), and Addenbrooke's Cognitive Examination (ACE-III). Specific domain of cognition was measured as Span of attention (Tachitoscope), Memory (PGI Battery scale), Executive Function (Stroop test), Visuospatial Function (Corsi block test), Sensorimotor Abilities (auditory /visual Reaction time), and Intelligence (Koh's Block design test).

Result: Preliminary findings suggest that the early diagnosis group showed significantly average cognitive performance compared to the late diagnosis group. They also showed improved metabolic control and increased levels of physical activity. Individuals in the early diagnosis group had higher educational levels and socioeconomic status, potentially leading to improved disease detection and more effective health management.

Conclusion: These findings indicate that identifying T2DM at an early stage, help in preserving cognitive function as compared to a diagnosis made at a later stage.

Keywords: Cognitive function, Early diagnosis, late diagnosis, Type 2 diabetes mellitus, Pilot study.



Aljohrah Aldubikhi
Saudi Electronic University, Riyadh, Saudi Arabia

The Effect of Health Educators on Diabetes Control

In 2021, the International Diabetes Federation reported that 537 million people aged 20-79 were living with diabetes, a number projected to increase to 643 million by 2030 and 783 million by 2045. This epidemic necessitates immediate action, with widespread Diabetes Education (DE) being a key approach. Many people lack sufficient knowledge about diabetes, underestimate its severity, and are unaware of the relationship between control and complications. Diabetes educators (DEs) assist patients in understanding their diagnosis and treatment, empowering them to adopt effective self-care behaviors.

This study examined existing data on DE's effectiveness, implementation strategies, and challenges through extensive literature research from PubMed and Google Scholar. The findings indicate that DE significantly improves diabetes management and prevention, potentially enhancing glycemic control in type 2 diabetes patients. A systematic review in the Middle East and North Africa (MENA) region showed improved patient outcomes in at least 60% of cases involving DEs. Health literacy was found to directly impact self-efficacy, predicted glycemic control, and self-care skills.

However, barriers to widespread DE implementation include vision impairments, literacy issues, inconvenient session timings, transportation difficulties, and personal priorities, especially in low- to middle-income countries. Despite these obstacles, DE has been shown to manage or delay diabetes and its complications through better dietary and physical activity habits, medication adherence, and regular monitoring. The DCCT/EDIC trial highlighted the lasting positive effects of behavior changes prompted by DE on glucose control. As research and technology advance, the role of DEs, now termed diabetes care and education specialists, is becoming increasingly vital and dynamic.

Biography:

Assistant professor at Saudi Electronic University. BSc in Clinical Nutrition, King Saud University MSc in Public Health Nutrition, University of Westminster. PhD in Epidemiology and Public Health, UCL. Specialized in behaviour change and weight management programmes at an individual and community level. Interested in Infection control and Technology. Speaker in several conferences. Submitted and published several studies in the field of health.

Mikhail G. Kolonin
University of Texas Health Science Center, Houston, USA

Anti-diabetic effects of GLP1 receptor agonists mediated by thermogenic interleukin-6 signaling in adipose tissues

Mechanisms underlying anti-diabetic effects of GLP1 analogs remain incompletely understood. We observed that in prediabetic humans exenatide treatment acutely induces interleukin-6 (IL6) secretion by monocytes and IL6 in systemic circulation. We hypothesized that GLP1 analogs signal through IL6 in adipose tissue (AT) and used the mouse model to test if IL6 receptor (IL6R) signaling underlies the effects of the GLP1-IL6 axis. We show that liraglutide transiently increases IL6 in mouse circulation and IL6R signaling in AT. Metronomic liraglutide treatment resulted in AT browning and thermogenesis linked with STAT3 activation. Interestingly, the response to liraglutide was more pronounced in viseral AT, linked with metabolic disease, than in subcutaneous AT. IL6-blocking antibody treatment inhibited STAT3 activation in AT and suppressed liraglutide-induced increase in thermogenesis and glucose utilization. We show that adipose IL6R knockout mice still display liraglutide-induced weight loss but lack thermogenic adipocyte browning and metabolism activation. We conclude that the anti-diabetic effects of GLP1 analogs are mediated by transient upregulation of IL6, which activates canonical IL6R signaling and thermogenesis. Our data from clinical samples indicate that GLP1 receptor agonists (GLP1RA) also activate AT thermogenesis in pre-diabetic patients. We are also investigating a potential role of the GLP1RA-IL6 axis in glucose metabolism in the skeletal muscle.

Biography:

Mikhail Kolonin, Ph.D. is a tenured professor and Director of the Center for Metabolic and Degenerative Diseases at the University of Texas, Houston. With a Ph.D. from Wayne State University, as a postdoc at M.D. Anderson Cancer Center, he has screened combinatorial libraries and identified tissue-specific cell surface markers that have been pursued as drug targets in obesity and cancer. His laboratory studies the roles of stromal cells in healthy metabolism / pathology and intercellular interactions mediated by GLP1 receptor agonists, cytokines, and long-chain fatty acids. His recent research has focused on the roles of cell senescence in aging-associated diseases.

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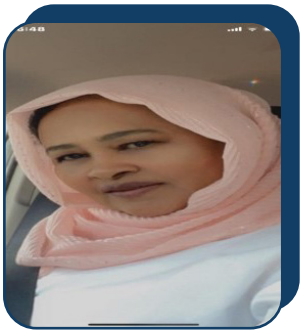
HYBRID EVENT

POSTER PRESENTATION
DAY 1

Mosleh Abomughaid
University of Bisha, Saudi Arabia

Phytochemicals profiling, in vitro and in vivo antidiabetic activity, and in silico studies on Ajuga iva (L.) Schreb.: A comprehensive approach

Ajuga iva (L.) Schreb. is a well-known antidiabetic medicinal plant used for several traditional medicine aspects in different areas of the world, including Libya. This study includes phytochemical analysis, antidiabetic evaluation, and *in silico* studies of the plant, *A. iva*, growing in Libya. The constituents of the plant were profiled using LC-MS/MS-QTOF analysis, and a total of 28 compounds were tentatively identified, including engeletin, pyrocatechol, eriodyctiol-7-hexoside, and 3,4-dihydroxybenzaldehyde, as major constituents. In addition, the steroidal compounds, i.e., 20-hydroxyecdysone, 24-dehydroprecyasterone, makisterone A, and ajugasterone D, which are considered chemomarkers for the plant, were also annotated by LC-MS analysis. The plant extract induced inhibition of α-amylase and α-glucosidase enzymes at IC_{50} values of 0.18 and 0.12 mg/mL, compared to the IC_{50} of the standard acarbose at 0.11 and 0.09 mg/mL, respectively. Fasting blood glucose (FBG, 360.7 mg/dL) levels were significantly reduced by the treatment of streptozotocin (STZ)-diabetic animals with 400 mg/kg (140.5 mg/dl) and 500 mg/kg (112.3 mg/dL) doses of the plant extract. The plant extract also induced a significant ($p < 0.01$) increase in insulin serum level compared to the untreated diabetic rats; however, the higher dose of the plant induced similar insulin induction compared to glibenclamide. Histopathological examination of the pancreatic and liver tissues indicated that A. iva extract induced regeneration in the islets of Langerhans and liver cells compared to the untreated diabetic rats. Docking analysis demonstrated that eriodyctiol-7-hexoside, echinacoside, and 2"-galloylhyperin showed the lowest binding energies to the target sites of α-amylase and α-glucosidase enzymes, indicating their potential role in *A. iva* antidiabetic bioactivities. The results support the recorded traditional bioactivity of *A. iva* as an antidiabetic herb, whereas its contents of polyphenols play a major role in the plant's antidiabetic effect.



Suhaila Abdalkarim Ali Fadol
Family And Community Medicine Department, Faculty Of Medicine , Jazan University , Saudi Arabia

Association of Anxiety and Depressive Symptoms and Treatment Adherence Among Patients With Type 2 Diabetes Mellitus in Jazan, Saudi Arabia: A Cross-Sectional Study

Background: Diabetes mellitus is a serious public health concern. It is associated with many psychological problems, such as depression, anxiety, and eating disorders. These co-morbidities are associated with improper adherence to treatment, self-care, poor glycemic control, more complications, and worse outcomes.

Methods: This study aimed to measure the level of medication adherence among type 2 diabetics in Jazan, Saudi Arabia, and to find its association with their psychological status (specifically, depression and anxiety).

A cross-sectional descriptive design was used among adults with type 2 diabetes at the Diabetes and Endocrinology Center in Jazan, Saudi Arabia. The estimated sample size was 480 patients.

The General Medication Adherence Scale and Patient Health Questionnaire-4 (PHQ-4) were used as tools to achieve the study objectives.

Results: A total of 449 diabetic patients completed the survey (93.5% response rate). Patients with poor, low, and partial adherence account for 337 (75%) of patients and only 112 (25%) have good and high medication adherence.

Employment and duration of illness were highly significant with a positive relationship to treatment adherence ($p = 0.010$ and 0.000, respectively). On the other hand, age and disease duration had a significant relationship with psychological disorders ($p = 0.029$ and 0.002, respectively). Of the patients, 64 (14.3%) had high scores on the PHQ-4, with depressive symptoms in 46 (10.24%) and anxiety symptoms in 75 (16.7%). Correlation analysis reveals that there is a highly significant negative correlation between psychological disorders and adherence to medications ($r = -0.288$, $p = 0.000$).

Conclusion: A negative correlation between psychological disorders and adherence to medications was found. The findings indicate the importance of psychological support for diabetic patients for better treatment adherence.

Biography:

Suhaila Abdalkarim Ali Fadol has completed her MD , RCGP at the age of 35 years from Egyptian Fellowship Ministry of health. she is assistant professor and consultant family medicine at jazan university and university hospital. She has published more than 14 papers in reputed journals and has been serving as an reviwer of repute.

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Donghong Gaoa
University at Albany, USA

Modification effects of ultrafine particles on the association between ambient extreme cold exposure and diabetes hospitalizations in winter and transitional months

Background: Although ambient heat exposure is linked with diabetes, the impacts of extreme cold exposure (ECE) or ultrafine particles (UFP) on diabetes are seldom studied.

Objectives: We aimed to examine the ECE-diabetes associations, evaluate the modification effects of UFP on the associations of interest, and identify populations vulnerable to ECE.

Methods: We conducted a time-stratified case-crossover study by using the diabetes admission data (primary diagnosis, 2013-2020) collected by the New York State Department of Health under the state legislative mandate. ECE was defined as <5th percentile of daily mean temperature and UFP-high was defined as >50th percentile of daily mean UFP. A conditional logistic regression was performed to quantify the cold-diabetes associations after controlling for air pollutants and holidays. Multiplicative and additive scales of the ECE-UFP interactions were investigated.

Results: ECE significantly increased diabetes hospitalizations during winter (ranges of odds ratios (ORs): 1.099-1.242, P<0.05) and in March (ranges of ORs: 1.068-1.177, P<0.05), but the risks increased more consistently in March. There were significant ECE-UFP interactions on diabetes at both multiplicative and additive scales during winter and in November. Moreover, the modification effects on the association of interest were stronger among older adults, females, Hispanics, urban residents, and patients with multiple comorbidities compared to other groups.

Conclusions: ECE significantly increased the burden of hospitalization for diabetes in winter transitional months rather than in winter, but multiplicative and additive scales of interactions between ECE and UFP on diabetes occurred in November and the winter. Vulnerability to ECE varied by demographics and comorbidities.

Kaisun Nesa Lesa
Khulna University, Bangladesh

Functional Food for Type 2 Diabetes Mellitus: Okara Noodles

Okara is a by-product of soybean curd residue that is obtained through the extraction of the water or milk fraction during the processing of soy milk and tofu. With a few modifications, okara powder (OP) and wheat flour (WF) were combined to made okara noodles (ON), which consist of high dietary fiber (DF) content. Okara can be considered as a useful functional ingredient that has positive effects on health, particularly for Type 2 diabetes mellitus (T2DM). However, there has not been investigation on the anti-diabetic effect of ON. The objective of the current study was to analyze the anti-diabetic effect of okara noodles in rats by analyzing the nutritional quality, DF content, and sensory characteristics of OP and newly developed ON. Different ratios of OP were prepared for each of the five treatments and all the treatments underwent for the nutritional, & DF analysis, and sensory evaluation for the consumer preferences. A total of twenty-four male wistar rats were divided into four groups. Three of the T2DM groups were fed formulated noodles variation, whereas the normal group of rats fed with standard feed. According to sensory analysis, the noodles made with 25% OP and 75% WF were the most accepted by customers. In vivo experiments revealed, T2DM rats given ON indicated greater serum insulin levels and HOMA-β index, and had lower blood glucose levels and HOMA-IR than those fed control noodles. ON have significant anti-diabetic properties, prompting the use of ON as a possible ingredient in diabetic food products.

Biography:

KAISUN NESA LESA completed her B.Sc (Honors) and first MS in Food and Nutritional Science from Bangladesh and double MS (By Research) in Indonesia (GMIF fully funded fellowship) from UGM. In 2023, she completed her short-term clinical research from Nihon University Hospital at Tokyo, Japan (ISPAD's Allan Drash Clinical Research Fellowship). She has 6 months internship experience on food and nutrition. She has five years' work experience as a Clinical Nutritionist. She has thirteen scientific publications in SCOPUS INDEX journals and currently she is serving as a Lecturer (Full time) in Food and Nutritional Science department in Bangladesh.

Meagan Horne
Houston Methodist Hospital, USA

Literature Review of Food Insecurity and Diabetes in the United States

Purpose/Objective: Create awareness and provide knowledge on steps to serving individuals with food insecurity and diabetes.

Background: Clinical, social/behavioral, and environmental factors all influence type 2 diabetes, which in turn affects nutrition and dietary intake that is critical in prevention and management of diabetes (Levi et al, 2023). Nutrition counseling positively impacts those with chronic illnesses, such as obesity and diabetes, to aid in positive lifestyle changes (ADA, 2024). However, many individuals do not have access to nutrition counseling, healthier food options, or are food insecure. In the United States, 11.3% of the population has been diagnosed with diabetes with approximately 13.5 million households experience food insecurity (Levi et al, 2023). Prevalence of food insecurity was higher in those with diabetes (16%) than those without diabetes (9%), and even more prevalent in adults who were insulin dependent (19%) and those who have eye or kidney complications (22%) (Kirby et al, 2021). Individuals who are food insecure are more likely to not be able to afford enough nutritious foods, require spending more on medications, frequently have more medical visits and emergency care needed, and work absenteeism (Levi et al, 2023).

Methods: A narrative literature review discussing individuals who are food insecure with diabetes in the United States and potential actions to take to serve this population.

Results: Medically tailored meals (MTMs) have gained more recognition for supporting chronic diseases; however, many are not provided to food insecure individuals (Levi et al, 2023). Federal Nutrition Assistance aids food insecurity among their fifteen programs reaching one in four households. Supplemental Nutrition Assistance Program (SNAP) and Women, Infants, and Children (WIC) are the most well-known programs (Levi et al, 2023). There is also likely an income gap between those who are food insecure but do not qualify for the programs.

Conclusion: Dedicating further research and policy development into social programs to assist food insecure individuals and focus on positive diet changes, especially those with diabetes and other chronic health conditions, not only will provide much needed assistance to individuals struggling, but also has the potential to make a positive impact on the financial implications of the United States healthcare system (Levi et al, 2023).

Keywords: food insecurity, diabetes, nutrition

Biography:

Meagan has been working as a registered dietitian nutritionist for ten years and has extensive experience providing nutrition support and nutrition counseling to various disease states, including cardiac disease, diabetes, kidney disease, GI disorders, food allergies, weight management, and more. She has further specialized receiving certifications in nutrition support and healthcare quality. Meagan received her Bachelor of Science in Nutritional Sciences and Dietetics with a minor in Spanish from Texas Tech University and completed her dietetic internship at Idaho State University. She has also completed a joint Master's in Health and Business Administration from University of Houston Clear Lake.

Yuosra A.Ali
Mosul of University Iraq

Evaluation of the use of vegetable oils used in the manufacture and production of types of potato chips in the city of Mosul

This study was conducted to estimate some characteristics of potato chips producing by the traditional method in Mosul city which markets the chips without packaging. Palm oil is used for frying at temperature between 170-180 centigrade for 3-5 minute the thickness slices 2-3mm ,50% from the fruits was peeling. The slices Were soaked in water for half hour. Random samples were used for different days at March, April, May, 2019 the products were generally characterized by the nonconformity between all samples studied. The for content of chips was relatively high in peroxide value 41.1-32.6% meqO2/kgm, free fatty acid between 17.5-17.18% and total fat 1.28-3.33% repectively. use garlic powder, salt, and hot pepper to enhance the flavor, It was observed that there was a significant effect on free fatty acids in the oil used in the production of potato slices, to which powder from a mixture of garlic, salt and hot pepper was added after the frying process. The present study showed that garlic, salt, and hot pepper added to improve flavor were no affected and no significant difference between the three groups.

Biography:

Yuosra Amer Ali obtained a master's degree at the age of 27 from the Moscow State University of Food Industries, specializing in food sciences and antioxidants, and doctoral studies at the age of 35 from the College of Agriculture and Forestry, Department of Food Science, at the University of Mosul, specializing in human nutrition, specializing in the nutrition of diabetics. He is a supervisor for a number of master's students. He has published more than 10 papers in reputed journals and served as a member of the reputed editorial board.

Shaima Albeloushi
Dasman Diabetes Institute, Kuwait

Comparative Effects of Fish Oil and Cocoa Butter Based High-Fat-High-Sucrose Diets on IL-1β Expression in Pancreatic β-cells

A high-fat-high-sucrose diet leads to the development of adverse metabolic changes that affect insulin sensitivity, function, and secretion, as well as the activation of inflammation. It has been found that the increased circulatory glucose and free fatty acids cause glucolipotoxicity, which induces inflammation, peripherally as well as locally in different tissues, particularly implicating the endocrine pancreatic β-cells. However, this adverse effect may vary, depending on the source of fat in the diet. C57BL/6 male mice (n=18) were randomly assigned to two dietary interventions, including Fish-HFHSD (n=6) or Cocoa-HFHSD (n=6), for 22 weeks. Pancreatic tissues were collected for immunohistochemistry to quantify insulin- and IL-1β-positive areas. Staining intensity was measured as an output of pixel gray value (px GV) using ImageJ software. The immunostaining intensity of insulin in β-cells was significantly higher (P = 0.001) in mice fed with Fish-HFHSD (183±7 px GV) compared to those fed with Cocoa-HFHSD (135±9 px GV). Conversely, the immunostaining intensity of IL-1β was significantly higher (P = 0.002) in mice fed with Cocoa-HFHSD (242±16 px GV) compared to those fed with Fish-HFHSD (152±13 px GV). As expected, the IL-1β:insulin ratio was significantly lower (0.83±0.1) in Fish-HFHSD fed mice compared to that (1.82±0.1) in Cocoa-HFHSD fed mice (P = 0.002). Our findings support a dietary model in which, as opposed to Fish-HFHSD feeding, the metabolic insult induced by Cocoa-HFHSD feeding in mice leads to increased IL-1β expression and reduced insulin expression in pancreatic β-cells.

Biography:

Shaima earned her B.Sc. and M.Sc. in biological sciences from the University of Kuwait and completed her Ph.D. in biomedical science at the University of Auckland, New Zealand. She has been working at Dasman Diabetes Institute for about 13 years. She is actively involved in projects related to metabolic inflammation and insulin resistance. Her research focuses on investigating β-cell morphology, structure, and function under the influence of high-fat diets with different fat sources. In addition, she is the chairperson of the Animal Care and Ethics Committee at Dasman Diabetes Institute.

Marilena Stoian
Carol Davila University of medicine
Romania

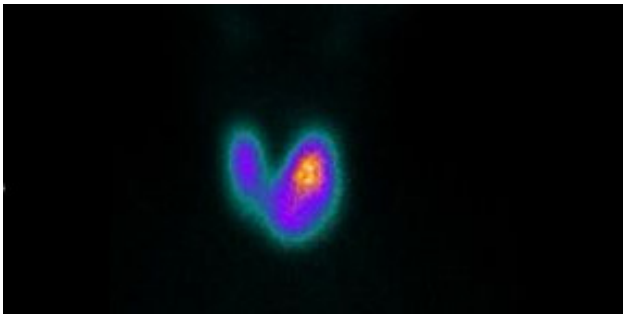
Nephrotic Syndrome In Patients With Diabetes Mellitus Is Not Always Associated With Diabetic Nephropathy

Type 2 diabetic nephropathy may be the consequence of some non-diabetic form of renal disease, but in type 1 diabetes mellitus (DM) of long duration (≥10 years) severe proteinuria is always related to a well -defined pattern of diabetic nephropathy. The clinical manifestations of diabetic nephropathy are similar in type 1 and type 2 diabetes, while the renal lesions may differ. Diabetic glomerulopathy is the predominant renal lesion in type 1 diabetes, although also tubular, interstitial, and arteriolar lesions are present in the advanced stages of renal disease. In contrast, in type 2 diabetes renal lesions are heterogeneous, and a substantial number of type 2 diabetic patients with diabetic kidney disease have mild or absent glomerulopathy with tubulointerstitial and/or arteriolar abnormalities. In addition, a high prevalence of non-diabetic renal diseases (NDRD), isolated or superimposed on classic diabetic nephropathy lesions have been reported in patients with type 2 diabetes, often reflecting the bias of selecting patients for unusual clinical presentations for renal biopsy. In case report of present article is illustrated that the nephrotic syndrome in patients with diabetes mellitus is not always associated with diabetic nephropathy non-diabetic renal disease

Rosa G. Zamarripa-Jáuregui
Instituto Mexicano del Seguro Social Mexico

Marine-Lenhart Syndrome: Case Report

A60-year-old woman was referred to endocrinology for thyrotoxicosis. Recently diagnosed with hyperthyroidism and treated with propranolol. Physical examination showed no orbitopathy and grade 1 goiter. Laboratory tests revealed suppressed TSH <0.02 (reference 0.40-4.94), T4L 6.8 (reference 4.87-11.72), T3L >22.8 (reference 0.63-1.34), thyroglobulin 126, and antithyroglobulin antibody 16.2. Thyroid Doppler ultrasound showed the right lobe 1.6 x 1.43 x 2.7 cm and left lobe 3.47 x 4.1 x 1.9 cm, with two mixed cystic lesions without vascularity. Three months later, she was asymptomatic. Laboratory tests showed TSH 3.03, FT4 <0.42, TSH antibody 25.09, thyroid peroxidase antibodies 130.18, and thyroglobulin antibodies 5.98. Technetium-99 thyroid scintigraphy indicated increased thyroid size and radiotracer concentration, especially in the upper third of the left lobe, diagnosing toxic multinodular goiter (see Image 1). This case of Marine-Lenhart Syndrome was confirmed and treated with adjusted thiamazole and high-dose I-131. Marine-Lenhart syndrome occurs when autonomously functional thyroid nodules (AFTN) coexist with Graves' disease or a diffuse hyperenhancement goiter, affecting 0.8-2.7% of Graves' patients. (1). Diagnosis includes hyperthyroidism lab results, positive thyrotropin-blocking autoantibodies, thyroid ultrasound indicating nodules, and scintigraphy showing diffuse uptake, especially in nodules. (2) Unlike toxic thyroid adenoma or multinodular goiter, which shows localized nodule uptake, Marine-Lenhart syndrome presents diffusely increased uptake with higher nodular uptake. (3) Antithyroid drugs often fail to normalize hormone levels, requiring higher doses of I-131 for effective treatment.



Technetium-99 thyroid scintigraphy

Biography:

Internal Medicine resident from San Luis Potosi, Mexico at Hospital General de Zona 50. I had published 2 papers in journals.

Aida Kabibulatova
Nazarbayev University School of Medicine, Kazakhstan

Encyclopedia of Bioanalytical Methods for Bioavailability and Bioequivalence Studies of Pharmaceuticals

Encyclopedia of Bioanalytical Methods for Bioavailability and Bioequivalence Studies of Pharmaceuticals (E-BABE): It is a unique encyclopedia involving bioanalytical methods for bioavailability and bioequivalence (BA/BE) studies of pharmaceuticals for suitable method selection with thousands of combinations and searches against these methods. Most scrutinized literature was collected from different sources including PubMed. This database has been curetted using published methods for all most all pharmaceuticals. Required information for regular method development/validation such as IUPAC name, structure, solubility, chromatographic conditions, instrumentation information like HPLC, LCMS detection parameters, sample preparations, recovery details, limit of detection and limit of quantification, Tmax, Cmax etc., for routine application in BA/BE studies of pharmaceuticals was incorporated including official pharmacopeias information such as European Pharmacopeia, Japan Pharmacopeia and US Pharmacopeia. Keen selections of bioanalytical methods for pharmaceutical analysis or regular quality control are also possible with E-BABE. E-BABE was built understanding the needs of pharmaceutical industry and laboratories including CROs working on BA/BE studies. Presently it has nearly of 5,000 methods and it will be updated regularly.

Biography:

Aida Kabibulatova has completed his PhD at the age of 25 years from Andhra University and postdoctoral studies from Stanford University School of Medicine. He is the director of XXXX, a premier Bio-Soft service organization. He has published more than 25 papers in reputed journals and has been serving as an editorial board member of repute.

Nazir Ahmad
Universitas Gadjah, Indonesia

Okra (Abelmoschus esculentus) Protects against Diabetes Mellitus and Cognitive Decline

Type 1 and type 2 diabetes mellitus (DM) have been associated with lower performance in several categories of cognitive function; more recent research has focused on the role of DM-mediated dementia. The burden of DM and cognitive impairment (CD) on world health has increased. Over 100 million people worldwide are impacted by DM and more than 55 million by CD. Although antidiabetic drugs are beneficial in treating DM-mediated CD, there are concerns over their long-term benefits because most of these drugs have a variety of unfavorable side effects. There has been some recent studies that supports the use of botanical medications, which frequently have low toxicity and adverse effects. Because of their negligible adverse effects for managing and preventing DM and CD in both industrialized and developing nations, these medications are garnering the attention of researchers who are examining traditional herbal therapies. To draw attention to the protective properties of okra (Abelmoschus esculentus) against CD and DM, the current review has explained. Several databases, such as PubMed, Google Scholar, and Scopus, were searched using a different keywords related to DM, CD, and okra. This paper compiles the data that is currently available on the health benefits of okra against DM, and CD, suggesting that okra can help control CD and DM. As a possible commercial treatment agent for DM and CD, this study will provide a foundation for future research into the preparation of okra.

Biography:

NAZIR AHMAD has completed his PhD at the age of 30 years from Faculty of Pharmacy, Universitas Gadjah Mada, Indonesia under GMIF fully funded scholarship (session 2021-24) and MPhil Pharmacology from the Faculty of Pharmaceutical Sciences, Government College University Faisalabad, Pakistan under Master Level PEEF Scholarship (session 2017-19). His major interests are Diabetes Mellitus, Neuropharmacology, and Natural Products. He has five years work experience as pharmacist. He is the Scientist at the Research and Development, Well Grow Nutraceuticals Faisalabad, Pakistan. He has published more than 10 papers in reputed journals and has been serving as a reviewer of repute.

Hameed Abdul
Ziauddin University, Pakistan

Hispidulin is an insulin secretagogue targeting the AKAP9-mediated PKA signaling pathway

Aim: Inadequate insulin secretory impairment in response to high glucose is considered predominant in Asian non-obese type 2 diabetic subjects. Hispidulin, a natural flavone, was identified as a new insulin secretagogue that enhances insulin secretion in response to high glucose and seems a better drug candidate than synthetic marketed drugs. Here, we explored the insulinotropic mechanism(s) of hispidulin.

Methods: Secreted insulin and intracellular cAMP contents from batch-incubated C57BL/6 J mice islets and INS-1 832/13 cells were measured using an AlphaLISA kit. Preparation of hispidulin-immobilized beads and affinity purification with hispidulin-immobilized beads were performed. INS-1 832/13 β-cells were transfected with the AKAP-9 siRNA or scrambled siRNA using Lipofectamine RNAiMAX reagent. AKAP-9 knockdown was confirmed by western blotting.

Results: Hispidulin showed insulin secretory potential in INS1832-13 cells and isolated mice islets in response to high-glucose. Furthermore, hispidulin amplified glucose-induced insulin secretion in depolarized and glibenclamide-treated islets. Hispidulin showed no effect on intracellular cAMP concentration; however, showed an additive effect in both forskolin and IBMX-induced insulin secretion. Among the inhibitors of major signaling pathways, H89, a PKA inhibitor, completely inhibited hispidulin-induced insulin secretion. Hispidulin showed a strong binding affinity with A-kinase anchoring protein 9 (AKAP-9). Interestingly, in AKAP-9 knock down β-cells, hispidulin-mediated glucose-induced insulin secretion was further amplified. Interestingly the intracellular PKA signaling was further increased using hispidulin alone and AKAP-9 knockdown β-cells.

Conclusion: Hispidulin increases intracellular PKA concentration and inhibits the negative regulation of AKAP-9-cAMP-PKA signalosome, enhancing glucose-induced insulin secretion. The promising glucose-dependent insulin-releasing mechanism makes hispidulin a potential anti-diabetic drug candidate.

Keywords: Hispidulin, Insulin secretion, Mice islets, A-kinase anchoring protein 9 (AKAP9), Protein kinase A.

Biography:

I am working as Associate Professor at Ziauddin College of Molecular Medicine, Ziauddin University Karachi,Pakistan. I did Post Doc from Institute for Molecular and Cellular Regulation (IMCR), Gunma University, **Japan**. My key research achievements are, i) honored **AASD Investigator Award for 2019** (copy attached) by Japan diabetic society in Sendai, Japan ii) honored **Excellence Award for Outstanding Scientific Work in 2018** by Japan Endocrine Society (JES), in Japan. iii) published 26 research articles with **Impact Factor of 121** iv) presented research findings in Sweden, Germany, Czech Republic, France and Japan, supported by EASD, Japan Endocrine Society, and Japan Diabetic Society.

Giuseppina Lagana
University of Messina ,Italy

Catechins and Proanthocyanidins are, among polyphenols compounds, two of the most representative and widespread examples found in fruits and vegetables. Moreover, they have shown very interesting and characteristic properties, functions of their basic chemical structure and the characteristic features present at the level of the different rings, making them suitable compounds against various pathological conditions, such as insulin resistance, diabetes and related diseases. Recent research and epidemiological studies have highlighted that besides their remarkable antioxidant ability, certain catechins and proanthocyanidins may influence different signaling pathways involved in cell survival, growth and differentiation. In the present communication, we will summarize the actual knowledge on the mechanisms of catechins in alleviating hyperglycemia by improving insulin resistance and reducing the risk factors for Type 2 Diabetes Mellitus such as oxidative stress, dyslipidemia and obesity. We will take into account both the in vitro and clinical studies, along with efficient doses needed to perform their activity. We will also analyze the potential implications of catechins diet supplementation, distribution and bioavailability, essential for a deeper understanding of their role in reducing risk factors and preventing hyperglycemia and cardiovascular problems through different features of their efficacy on vascular parameters (blood pressure, inflammatory and antioxidant status, platelet aggregation, atherosclerosis), metabolic syndrome, myocardial conditions, and lipid and glucidic metabolism.

Biography:

Giuseppina Lagana has graduated in Biological Sciences and in Pharmacy; moreover, she has completed his specialization in Biochemistry at the age of 27 years from University of Messina, Italy. She is an aggregate professor of Biochemistry at the Master's Degree in Biology of health, Applied Technologies and Nutrition. She has published more than 75 papers in reputed journals.

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