29-31
JULY, 2024

inovine
Scientific Meetings

8th Global Summit on

DIABETES & OBESITY

Venue:
Hyatt Place London Heathrow Airport, UK

Scientific Program

08:00–08:30: Registrations

08:30–08:45: Opening Ceremony

DAY 1

JULY, 29 2024

Keynote Presentation

09:00-09:40	
Therese Mary Cameron Diabetes Alliance, Australia	Title: Cultural Impacts on Propensity for Obesity

09:40-10:20	
Samir Kumar Talukdar Rangpur Medical College & Hospital, Bangladesh	Title: Integrated Approaches to Diabetes and Obesity Management

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: Therese Mary Cameron, Diabetes Alliance, Australia

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

10:40-11:00	
Md. Masud Un Nabi Rajshahi Medical College, Bangladesh	Title: Therapeutic inertia to Insulin therapy– Magnitude of problem & Solution

11:00-11:20	
Shweta Arora SP Jain School of Global Management, India	Title: Identifying Lifestyle Habits Driving the Increase in Type 2 Diabetes and Obesity among the Indian Population: An Observational Analysis

11:20-11:40	
Panagiotis Rigopoulos Aristotle University of Thessaloniki, Greece	Title: Assessing the broader economic value of preventing morbidity and mortality in the Greek population
11:40-12:00	
Apostolos Stratopoulos University of Patras, Greece	Title: Assessing the broader economic value of preventing morbidity and mortality in the Greek population
12:00-12:20	
Rania Alnounou London Consulting Medical Center, United Arab Emirates	Title: Incretin drugs for diabetes management
	Lunch Break 12:20–13:20 @ Foyer
13:20-13:40	
Jhunior Jhonathan Gosalvez Sanchez Centro Medico Vivamed S.R.L, Bolivia	Title: Unraveling the Complexity of Type 2 Diabetes: Advances in Pathophysiology, Clinical Management, and Therapeutic Innovations
13:40-14:00	
Pratibha Gupta Central State University, USA	Title: The Role of Nutrigenomics in Diabetes and Obesity Prevention
14:00 -14:20	
Panjasaram Vassie Naidoo University of KwaZulu–Natal, South Africa	Title: Diabetes, its Prevalence and Predictors in HIV Infected persons
14:20-14:40	
Gurch Randhawa University of Bedfordshire, United Kingdom	Title:

Poster Presentations

14:40-15:00	
Shweta Arora SP Jain School of Global Management, India	Title: Identifying Lifestyle Habits Driving the Increase in Type 2 Diabetes and Obesity among the Indian Population: An Observational Analysis

Panel Discussion & Certificate Falicitation

Day –1 Ends

DAY 2

JULY, 30 2024

Zoom Meeting (GMT+1) Time in United Kingdom

09:00-09:20	
Ravi Muppirala Jeeva Therapeutics, USA	Title: What should be the therapeutic target in the treatment of Type–2 Diabetes
09:20-09:40	
G. Naresh Kumar Jeeva Therapeutics, USA	Title: Missing links in the aetiology and progression of Type 2 Diabetes
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	
MD. Khalid Saifullah Chevron Specialized Hospital, Bangladesh	Title:Depression and Controlled vs Uncontrolled Diabetes mellitus (Type 1 & Type 2)
10:20-10:40	
MD. Nurul Huda Likhon Shahid ATM Jafar Alam Diabetic & Community Hospital, Bangladesh	Title:Depression and Controlled vs Uncontrolled Diabetes mellitus (Type 1 & Type 2)
10:40-11:00	
Mariya Tabassum Abdul Malek Ukil Medical College, Bangladesh	Title: Comparing Effectiveness of the three Novel Lipid Indices in predicting Metabolic Syndrome in young Bangladeshi Adults : A Cross–sectional study
11:00-11:20	
V K Sashindran KS Hegde Medical Academy, Nitte (deemed) University,India,	Title: Impact of A Low–cost Multi–Component Strategy on Health of Elderly Diabetics in An Indian Urban Slum
11:20-11:40	
Mohanad Mahdi Thumad Al–kaisey, Baghdad College of Medical Sciences, Iraq	Title: Correlation of staging and risk factors with cardiovascular autonomic neuropathy in patients with type II diabetes mellitus
11:40-12:00	
Hanaa Tarek El–Zawawy American Hospital Dubai, United Arab Emirates	Title: Subclinical hypothyroidism: To treat or not to treat?

12:00-12:20

Anasuya Ganguly
BITS–Pilani,India

Title: Testing new approaches for Diabetes Treatment– from Tissue Engineering to 3D bioprinting

Panel Discussion

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8th Global Summit on

DIABETES & OBESITY

July 29-31, 2024 | London, UK

HYBRID EVENT

KEYNOTE PRESENTATIONS

DAY 1

Therese Mary Cameron
Diabetes Alliance, Australia

Cultural Impacts on Propensity for Obesity

In Australia our first nation's people are at a threefold increased risk of diabetes. [1] However, our outback Aboriginal communities have surprisingly low levels of diabetes. It is the causation community members in that region who have a higher propensity for obesity and diabetes. Community values around food and eating are very different between the Caucasian and aboriginal communities, as it is for other ethnic groups in the region, such as the Fijian community. These values impacted eating patterns and thus obesity and diabetes risks. Our Indian communities often eat late at night, sometimes at 9pm or 10pm. There is no time to “walk the food off” and it is laid down as fat. Our Fijian communities have regular “feasts” each time they meet up, with their traditional food on offer, in plentiful volumes. Conversely, Aboriginal communities report they prefer, fish, emu and Kangaroo. These foods are cooked without rich sauces. These foods are not available to their city relatives, who eat a more “western diet”, which has been attributed to causing weight gain. Possibly the most crucial time to educate a community member about food is during pregnancy. It is interesting to note that doctors caring for the Vietnams community discovered their interpreter - unbeknown to them - was providing diabetes food education at the beginning of pregnancy. This apparently helped to prevent overeating, excessive weight gain and decreased the numbers of women diagnosed with diabetes in pregnancy at their clinic. While cultural norms and values around food may differ, providing education during pregnancy has the potential to help across all communities, with the possible long-term outcome of reducing obesity in individuals.

Biography:

Principal and founder of Diabetes Alliance - 2009. Therese is a highly respected, Credentialed Diabetes Nurse Educator and Chronic Care Coordinator. She graduated from Australia's University of Technology Sydney's post graduate course in Diabetes Education and Management, before becoming one of the first nurses in Australia to be awarded her own Medicare Provider Number. She was part of Australia's inaugural committee to workshop diabetes Clinical Care Pathways and was also on the inaugural palliative care and diabetes pathway committee. Therese has worked in a wide variety of work places, including state, private and veterans' hospitals, health insurance companies, the pharmaceutical industry and government funded not-for-profits, tasked with education of general practitioners and leading the way with new policies, by way of clinical pathways and innovative management changes in health. Indeed, Therese's innovative idea of having health care buses that can take health professionals – including podiatrists - out to remote communities, has been met with high accolades and is in the process of being rolled out in Australia.

Samir Kumar Talukdar
Rangpur Medical College & Hospital, Bangladesh

Topic: Integrated Approaches to Diabetes and Obesity Management

Diabetes & Obesity are considered to be two interlinked metabolic disorder that have reached global epidemic proportionately. According to recent data, over 537 million people are living with diabetes, meanwhile obesity affects more than 764 million, they often coexist, leading to a series of health hazard and increased mortality rates as well. Obesity, characterized by abnormal or excessive fat accumulation, significantly contributes to the development of type 2 diabetes mellitus (T2DM) and other multiple metabolic complications such as stroke, dyslipidaemia, hypertension, coronary artery disease, coronary heart failure, NAFLD, gallstones etc. In depth knowledge of underlying mechanisms and regulation of energy homeostasis is pivotal to develop potent strategies for prevention & treatment of obesity. Central nervous system, particularly the hypothalamus intricately regulates energy homeostasis. The complex interconnection of neuropeptides, hormones and neurotransmitters modulates appetite, energy expenditure and adiposity. Any kind of dysregulation in this crucial pathway can lead to obesity and metabolic deterioration. Targeting these pathways provide positive outcome for therapeutic interventions. Physical activity & balanced diet is considered to be the cornerstone in the management of obesity & diabetes. Physical activity promotes weight loss which is directly associated with reduction in risk of type 2 DM, improvements in blood pressure & lipid profile, reduction in CV mortality and so on. Current recommendations advocate for a combination of aerobic exercise, resistance training, and flexibility exercises to promote weight loss and improve metabolic health. Engaging in muscle-strengthening exercises at least 2 days per week & at least 150-300 min of moderate-intensity aerobic activity each week or at least 75-150 minutes of vigorous-intensity aerobic activity each week is recommended for adults. Incorporating regular physical activity not only aids in weight loss but also improves insulin sensitivity, glycaemic control, and cardiovascular health. In recent year, significant advancement has been observed in pharmacological interventions for obesity management. Medications like Sympathomimetic amine anorectic (Phentermine) is used for short term management, On the other hand Sympathomimetic amine anorectic/antiepileptic combination drugs are used for long term treatment. Glucagon-like peptide 1 receptor agonist is considered to be another potent option for weight management. Novel molecule Tirzepatide, a dual glucose-dependent insulinotropic polypeptide (GIP) and glucagon-like peptide-1 (GLP-1) receptor agonist, has shown promising results in clinical trials. Its ability to improve glycaemic control, promote weight loss, and reduce cardiovascular risk makes it a potential breakthrough in the pharmacological armamentarium against obesity and diabetes. In conclusion, diabetes and obesity pose significant challenges to global health, necessitating comprehensive strategies for prevention and management. Understanding the intricate regulation of energy homeostasis, promoting physical activity, exploring pharmacological interventions like tirzepatide, and considering bariatric surgery in appropriate cases are crucial components of a multifaceted approach. Combining these strategies can provide a more effective and personalized approach to tackle the complex interplay between diabetes and obesity, ultimately improving overall health outcomes and reducing the burden of these prevalent and interconnected conditions.

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HYBRID EVENT

SPEAKER PRESENTATIONS
DAY 1

Md. Masud Un Nabi
Rajshahi Medical College, Bangladesh

Therapeutic inertia to Insulin therapy– Magnitude of problem & Solution

Diabetes is a growing burden across the globe. Achieving optimal glycaemic control is of paramount importance while managing diabetes mellitus to prevent complications and improve patient outcomes. Every 1 % reduction in HbA1c can reduce long term diabetic complications. However, therapeutic inertia is related to failure to initiate, titrate or intensify treatment when necessary despite a clear indication, which is considered to be a notable challenge to achieve optimal glycaemic control, particularly in insulin therapy.

Therapeutic inertia in insulin therapy encompass a wide range of spectrum including initiation inertia, titration inertia, and intensification inertia. Each type contributes to prolonged periods of suboptimal glycaemic control, leading to increased risk of diabetes-related complications. On the other hand, early insulin initiation is projected to lead substantial improvements in clinical outcomes for patients with T2DM increasing life expectancy by 6 months & extend time to develop diabetes-related complications by 7 months.

Clinical inertia in diabetes management can occur at different levels including patient, provider, and healthcare system levels. Factors contributing to therapeutic inertia range from patient reluctance to initiate or intensify insulin therapy, concerns regarding hypoglycaemia, weight gain, burdensome & complex regimen, fear of injections and/or fear of self-measuring blood glucose, economical concerns and so on. In contrast, major physicians related reasons are HCPs overestimate patient concerns, lack of experience in initiating insulin, lack of time need to counsel the patients about need, lack of supporting staff etc. To encounter therapeutic inertia, multiple approaches are necessary, including patient education, counselling and empowerment, effective communication, providing training and support, simplify regimen complexity, proper use of technology, mobile health applications for diabetes self-management and system-level interventions to rationalize processes and ensure timely treatment intervention.

Additionally, recognizing and addressing insulin distress, characterized by psychological barriers and emotional distress associated with insulin therapy, is crucial for optimizing patient adherence and outcomes. Management of insulin distress based upon four cardinal features involves strengthening of self-care skills, optimization of coping skills, minimizing change-related discomfort, and utilization of external support.

To Summarize, overcoming therapeutic inertia in insulin therapy requires a multifaceted effort involving patients, healthcare providers, and healthcare systems. With implementation of Diabetes Self-Management Education, using algorithms such that titration can be patient-driven, developing web-based titration applications, and facilitating nurse-led insulin management. By implementing strategies to address various forms of inertia and insulin distress, clinicians can improve glycaemic control, reduce diabetes-related complications, and enhance overall quality of life for individuals living with diabetes.

Shweta Arora
SP Jain School of Global Management, India

Exploring Constraints in the Acceptance of Glucagon-Like Peptide Antagonists for the Management of Diabetes and Obesity in India: A Comprehensive Study and Innovative Strategy Design

This study sets out to identify and elucidate the primary constraints that hinder the acceptance of Glucagon-like Peptide Antagonists in the effective management of diabetes and obesity. Additionally, the research aims to pioneer an innovative strategy to overcome these identified constraints successfully. A notable challenge in this context is the pricing of innovative drugs, specifically those designed to address Type 2 Diabetes Mellitus (T2DM) and its prevalent comorbidity, obesity. Despite the promising emergence of medications such as GLP1 analogs in the Indian market, their prohibitive costs and limited awareness about the molecule, attributed to substantial research and development investments, pose a significant barrier.

The pricing strategy, crafted to maximize profits during exclusivity periods, imposes restrictions on market share and accessibility. This is particularly noteworthy in India, where a substantial proportion of patients falls into the self-pay category, often lacking extensive financial planning for healthcare. The study will also delve into multifaceted aspects such as financing schemes, market access strategies, market liberalization, internet trading, and the impact of biosimilars on pricing, providing a comprehensive understanding of the intricate landscape.

To address existing gaps in discussions related to discounts, rebates, profits, and price transparency, this research aims to introduce the New Product Pricing Model (NPPM). Furthermore, it advocates for increased dissemination of long-term data on GLP1 by multinational companies to healthcare professionals (HCPs), emphasizing the importance of designing an efficient brand-building strategy. This comprehensive approach is expected to not only enhance the accessibility of anti-diabetic and anti-obesity products in India but also foster a greater understanding and appreciation of GLP1 among healthcare professionals.

Key Words:

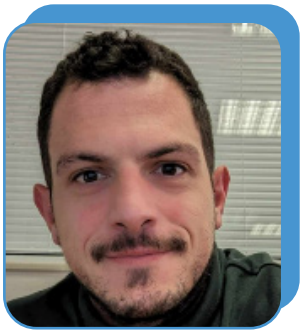
1. **Diabetes:** A medical condition characterized by elevated blood sugar levels, resulting from the body's inability to produce or effectively use insulin.
2. **Obesity:** A condition in which a person has an excess of body fat, often measured by body mass index (BMI). It is associated with various health problems and increased risk of chronic diseases.

3. **Self-Pay:** Refers to the payment of medical expenses by the patient themselves, without reliance on insurance coverage or third-party payers.
4. **GLP1 Analogues (GLP1 Analogs):** Glucagon-like peptide-1 analogs are a class of medications used in the treatment of type 2 diabetes. They mimic the action of the naturally occurring hormone GLP-1, which regulates blood sugar levels.
5. **New Product Pricing Model:** A strategy for determining the cost or pricing structure for a recently introduced product. It involves considerations such as production costs, market demand, competition, and perceived value.
6. **Market Access Strategies:** Plans and tactics implemented by companies to ensure that their products or services are available and accessible to the target market. This involves navigating regulatory, economic, and competitive factors.
7. **Market Liberalization:** The process of reducing government restrictions and regulations on economic activities, allowing for increased competition, innovation, and free market dynamics.

Biography:

Shweta Arora is a seasoned professional with 14 years of experience in the multinational pharmaceutical and research industry. She is currently pursuing a Ph.D. from SP Jain Global College of Management and serves as a Senior Medical Scientific Liaison at Guerbet India Limited. In this role, she leads strategic planning, marketing operations, and training initiatives, contributing to medical and scientific research while ensuring the highest standards of clinical practices. Shweta previously worked in the medical and research team at Novartis India Limited, where she played a key role in research and development projects, implemented effective medical strategies, and provided scientific support.

With a comprehensive background in strategic planning, marketing operations, training and development, clinical research, medical writing, and pharmacovigilance, Shweta is a well-rounded expert in her field. Additionally, she is a professional nutritionist and anti-aging expert, combining her expertise in these areas to provide valuable insights and support. Her proficiency in conducting and analyzing clinical research, providing comprehensive training and development programs, and expertise in medical writing and pharmacovigilance further enhance her capabilities. Shweta's dedication to her profession is evident through her ongoing Ph.D. studies and her commitment to advancing medical and scientific knowledge.



Panagiotis Rigopoulos
Aristotle University of Thessaloniki, Greece

Assessing the broader economic value of preventing morbidity and mortality in the Greek population

Introduction: Diseases globally pose a substantial economic burden on individuals, healthcare systems, and the economy. Primary and secondary prevention may mitigate this clinical and economic burden. This study aims to quantify the broader economic gains arising from preventing vaccine-preventable pediatric diseases and from treatment-avoidable adult morbidity and mortality.

Methods: A mathematical model was constructed to evaluate the socioeconomic and fiscal gains from vaccination against diphtheria, tetanus, pertussis, polio, haemophilus influenzae type B, and hepatitis B, LDL-C reduction therapies, anti-glaucoma and osteoporosis treatments. Mortality and morbidity gains were translated into socioeconomic gains by estimating the present value of averted loss of lifetime income, averted absenteeism, and hospitalization costs. The corresponding fiscal gains were averted tax revenue loss and prevented disability pensions. Targeted literature searches were conducted to identify evidence on the effectiveness of preventive healthcare interventions whereas economic data were obtained from official sources.

Results: Vaccinating a birth cohort of N=100,000 is expected to prevent mortality and morbidity that corresponds to €39.9 million in societal gains and €35.0 in fiscal gains. Treating 100,000 patients with cholesterol-lowering treatments is estimated to yield societal gains of €19.4 million with fiscal gains accruing to €7.5 million. Treating 100,000 patients for glaucoma or osteoporosis is estimated to prevent morbidity that translates into societal gains of €0.5 and €1.0 million, respectively. The estimated fiscal gain is €9.1 and €0.2 million for glaucoma and osteoporosis, respectively.

Conclusion: Primary and secondary prevention through vaccination and treatment generates substantial socioeconomic and fiscal gains which may favor the sustainability of tax-financed healthcare systems.

Biography:

Panagiotis Rigopoulos is a pharmacist with a master's degree in clinical pharmacology and postgraduate studies in health economic evaluation. He has important experience in market access, economic models and Health Technology Assessment. He currently works as a Market Access Coordinator in Vianex S.A., Athens, Greece.

Apostolos Stratopoulos
University of Patras, Greece

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Rania Al Nounou
London Consulting Medical Center, United Arab Emirates

Incretin drugs for diabetes management

The Purpose of this study is to critically evaluate healthcare practice based on a literature background, and to suggest real practice improvement. The prevalence of type 2 diabetes is increasing at an alarming rate, with only half of patients achieving the recommended HbA1c target. This study tends to focus on incretin-based treatment for type 2 diabetes, and their utility in clinical practice, specifically in private clinical practice in Abu Dhabi. Incretin drug group stimulates insulin secretio, inhibits glucagon production, improves beta-cell health, slows gastric emptying, promotes early satiety, and reduces food intake (Nyenwe EA, 2011). This study is a clinical audit supported by literature review that shows new drugs for diabetes management and despite being expensive, they do not reach the target of diabetes control. A lot of gaps in the clinical practice, especially primary care level, needs to be modified to achieve holistic diabetes management. In this study, 150 patients with type 2 DM who are taking Incretin drugs medication (GLP1RA, DPP4) with or without other diabetic medication were followed up between 3 – 6 months, from Septmeber and Decmeber 2016, in Abu Dhbai Mediclinic Hospital. Five variables (parameters) were followed: HBA1c, BG, BP, BW, and eGFR. Results indicate that only 25.8% of patients reached the target during 3-6 months of treatment. This study suggests the importance of developing a system which would enable easier identification of uncontrolled DM and establishing a new educational program to give extra advice about any new medication prescribed for the first time to treat long term condition like diabetes.

Keywords: Diabetes management, HBA1c, Type 2 DM, incretin-based treatment.

Biography:

I completed my education as Bachelor of Medicine, Bachelor of Surgery MBBS, in Damascus University, Syria 1993. After graduating, I completed 2 years of practicing medicine in Damascus, and started my career in the UAE, in 1995. I worked with famous Hospitals in the UAE, including AlJazera Hospital, Al Noor Hospital, Prime Medical Center and Mediclinic International. I have significant experience in treating acute and chronic diseases, including Diabetes, hypertension and dyslipidemia and experience in Child health management. I am certified in pediatric healthcare management with the University of Monash. I completed my Master in Diabetes management from the University of South Wales, UK, in 2017 and I am a member of the Royal College of Physician UK. During my Master and MRCGP study, I performed research tasks relevant to Family Medicine and quality control, like clinical Audit. I was also engaged in teaching and health education, and participated in community health awareness in the field of diabetes and Thalassemi. Currently, I am a diabetologist and a Primary Care Physician at the London Consulting Medical Center, United Arab Emirates.

Jhunior Jhonathan Gosalvez Sanchez
Centro Medico Vivamed S.R.L, Bolivia

Unraveling the Complexity of Type 2 Diabetes: Advances in Pathophysiology, Clinical Management, and Therapeutic Innovations

Type 2 Diabetes Mellitus (T2DM) has evolved from a simple glucose homeostasis disorder to a complex multisystemic disease, presenting unprecedented challenges to global health. This comprehensive presentation delves into the intricate pathophysiology of T2DM, exploring advanced mechanisms that underlie its development and progression. We begin by examining the multifaceted dysfunction of pancreatic β-cells, including endoplasmic reticulum stress, altered autophagy, amyloid deposition, and lipotoxicity. The presentation then navigates through the complexities of multi-organ insulin resistance, highlighting alterations in insulin receptor signaling, mitochondrial dysfunction, and oxidative stress.

A significant focus is placed on the role of chronic low-grade inflammation in T2DM, detailing the activation of inflammatory pathways such as NF-κB and JNK, and the crucial role of adipocytokines in modulating insulin sensitivity. The emerging importance of intestinal dysbiosis in T2DM pathogenesis is explored, emphasizing its impact on host metabolism and potential as a therapeutic target.

The genetic and epigenetic landscape of T2DM is scrutinized, unraveling over 400 susceptibility loci identified through genome-wide association studies. We discuss the intricate gene-environment interactions and epigenetic mechanisms, including DNA methylation and histone modifications, that contribute to T2DM risk and progression.

The complex relationship between obesity and T2DM is examined in depth, challenging traditional paradigms with concepts like “metabolically healthy obesity” and “metabolically obese normal weight.” We explore adipose tissue expandability, ectopic lipotoxicity, and the potential of brown adipose tissue activation as therapeutic strategies.

Cutting-edge clinical management strategies are presented, including novel pharmacotherapies such as dual and triple receptor agonists (GIP/GLP-1/glucagon), fructose-1,6-bisphosphatase inhibitors, and selective glucocorticoid receptor modulators. The remarkable effects of metabolic surgery are discussed, highlighting mechanisms beyond weight loss, including changes in gastrointestinal hormones, bile acids, and microbiota.

Emerging cell-based therapies and regenerative medicine approaches are explored, offering potential for β-cell restoration. The integration of artificial intelligence and precision medicine in T2DM management is examined, alongside the development of closed-loop artificial pancreas systems and novel biomarkers for risk stratification and therapy selection.

Finally, we address global challenges in T2DM management, including the impact of climate change on disease epidemiology, healthcare disparities, and the urgent need for effective population-level prevention strategies. This comprehensive overview aims to bridge cutting-edge molecular insights with clinical practice, fostering a multidisciplinary approach to combat the T2DM epidemic effectively and improve patient outcomes worldwide.

Key words: Endocrinologist, Type 2 Diabetes, Bolivia, Patient-Centered Care, Metabolic Disorders

Biography:

I am Dr. Jhunior Jhonathan Gosalvez Sanchez, a dedicated physician and endocrinologist with three years of clinical experience. My journey in medicine began in Bolivia, where I received my medical education and specialized training in endocrinology, earning recognition for my academic achievements. As both a general practitioner and an endocrinologist, I have developed a strong foundation in managing a wide range of health conditions, with a particular focus on Type 2 Diabetes and other metabolic disorders.

Throughout my career, I have been committed to providing comprehensive, patient-centered care, always striving to integrate the latest medical advancements into my practice. My dual expertise as a general physician and endocrinologist allows me to approach diabetes management from a holistic perspective, considering both its systemic effects and specialized endocrine aspects.

My experience in Bolivia has given me a unique perspective on healthcare challenges in diverse settings, which I believe is invaluable in addressing the global nature of the Type 2 Diabetes epidemic. I am passionate about continuing medical education and staying at the forefront of diabetes management and endocrinology. Regularly attending international conferences and workshops has allowed me to keep abreast of the latest developments in these fields.

As a young professional with specialized training in endocrinology, I am eager to contribute to the ongoing dialogue about improving diabetes care and prevention strategies. I am particularly interested in the intersection of traditional clinical practice with emerging technologies and precision medicine approaches in diabetes and endocrine care.

I believe that my fresh perspective, combined with my dual training as a physician and endocrinologist received in Bolivia, positions me well to participate in discussions about innovative approaches to tackling the global health challenges posed by Type 2 Diabetes and other endocrine disorders.

Panjasaram [Vassie] Naidoo
University of KwaZulu-Natal, South Africa

Diabetes, its Prevalence and Predictors in HIV Infected persons

Diabetes mellitus a chronic non-infectious medical condition, if not well managed could lead to fatal complications. Antiretroviral therapy has increased the life span of persons living with HIV (PLWH) thereby exposing the HIV infected aging population to chronic diseases such as diabetes. The prevalence of diabetes among PLWH in KwaZulu-Natal and its predictors were not well understood. This study conducted in four public health care facilities in KwaZulu-Natal aimed at determining the prevalence and predictors of diabetes amongst these PLWH This retrospective study was conducted in four public health care facilities in KwaZulu-Natal with a total sample size of 1203 after ethical approval and informed consent were obtained. Pretested questionnaires and patient medical charts were used to collect the data. SPSS version 26 was used to analyse the data using descriptive statistics and logistic regression.

The prevalence of diabetes among PLWHIV was 9%. Just over 47% of those who had diabetes, had uncontrolled blood sugar, with a mean fasting blood sugar (FBS) of 11.7 mmol/L. The predictors of diabetes among PLWHIV were gender and older age. Male PLWHIV had 65% less chances of having diabetes than females and those who were between the ages of 18 and 48 years were 88% less probable to have diabetes compared to those older than 48 years. Almost half (47.1%) of those who were diagnosed with diabetes still had uncontrolled hyperglycemia.

Public sector health care facilities in KwaZulu-Natal need to do much more to manage diabetes in PLWH in order to prevent diabetic complications and possible negative impact on the outcome of HIV management.

Key words: Diabetes, Factors, HIV, Predictors, Prevalence.

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HYBRID EVENT

POSTER PRESENTATION
DAY 1

Shweta Arora
SP Jain School of Global Management, India

Identifying Lifestyle Habits Driving the Increase in Type 2 Diabetes and Obesity among the Indian Population: An Observational Analysis

Diabetes and obesity are escalating health concerns in India, with diabetes cases rising at an alarming rate. This study identifies key factors contributing to the increasing burden of these conditions and emphasizes the adoption of essential habits to mitigate their impact. The study, conducted on 60 participants across varied age groups, underscores the importance of monitoring daily calorie intake, regularly checking weight, and prioritizing sleep, which aids in burning fat cells and improving metabolic health.

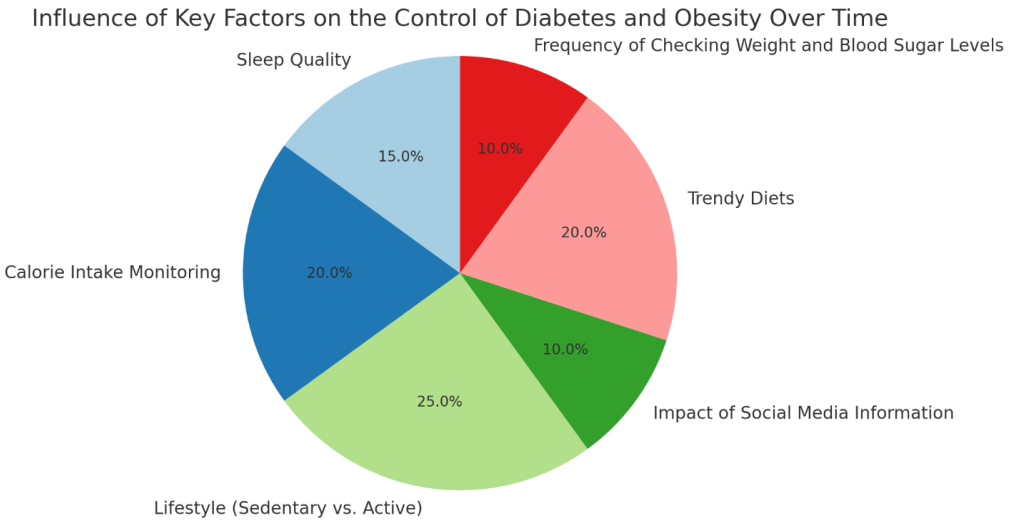
Poor dietary practices, notably neglecting the creation of a balanced and colorful food plate with appropriate proportions of carbohydrates, fats, and proteins, are identified as significant contributors to abdominal obesity. Abdominal obesity, in turn, is a major factor in insulin resistance and the development of diabetes. The study also highlights the detrimental impact of social media-induced binge eating, which exacerbates obesity and disrupts healthy eating habits.

The findings of this study emphasize several crucial habits for managing diabetes and obesity effectively. These include:

- Tracking Daily Calorie Intake: Monitoring calorie consumption is essential for maintaining a healthy weight and preventing excessive fat accumulation.
- Creating Colorful Food Plates: Ensuring that food plates are colorful and nutritionally balanced promotes better health outcomes.
- Ensuring Adequate Sleep: At least 7 hours of sleep per night is necessary for overall health and aids in fat metabolism.
- Avoiding Screen Time During Meals: Reducing digital distractions during meals can prevent overeating and promote mindful eating.
- Preferring Homemade Meals: Homemade meals are recommended over fad diets, as they are typically more balanced and nutritious.

Regular weight and blood sugar level checks are highlighted as critical practices for the early detection and control of diabetes and obesity. These checks enable individuals to manage their food and sugar intake more effectively, thereby reducing the risk of developing these conditions.

In conclusion, addressing the rising tide of diabetes and obesity in India requires a multifaceted approach that includes adopting healthier eating habits, engaging in regular physical activity, ensuring sufficient sleep, and consistently monitoring weight and blood sugar levels. The study's insights underscore the need for a comprehensive strategy to combat these conditions, fostering a healthier future for the Indian population. Awareness and education about the benefits of traditional homemade food over fad diets, along with reducing screen time during meals, can play a significant role in managing and preventing diabetes and obesity.



Research Methodology

Objective: To understand key habits that increase the risk of diabetes and obesity across different age groups.

Participants:

- Sample Size: 60 participants
- Age Groups: Diverse range to ensure comprehensive analysis Data Collection:
- Method: Survey
- Instrument: Structured questionnaire

Survey Design:

- **Questions:** Assess key factors influencing diabetes and obesity, including:
  - Sleep Quality
  - Calorie Intake Monitoring
  - Lifestyle (Sedentary vs. Active)
  - Impact of Social Media Information
  - Trendy Diets

- Frequency of Checking Weight and Blood Sugar Levels

Procedure:

1. Survey Distribution:
   - Participants were given survey questions in a structured format.
   - Surveys were distributed in person and completed by participants.
2. Data Collection Tool:
   - Responses were collected using Google Forms for easy data entry and management.
3. Data Analysis:
   - Data from Google Forms was exported and analyzed using built-in analysis tools.
   - Statistical analysis identified patterns and correlations between habits and diabetes and obesity risks.

Ethical Considerations:

- Informed Consent: Participants were informed about the study's purpose and provided consent.
- Confidentiality: Ensured privacy and confidentiality of responses.
- Voluntary Participation: Participation was voluntary, with the option to withdraw at any time.

Analysis:

- Quantitative Analysis: Descriptive statistics summarized the data; frequencies, percentages, and mean scores were calculated.
- Comparative Analysis: Data was compared across age groups to identify significant differences or trends.

Expected Outcomes:

- Identification of key habits that significantly increase the risk of diabetes and obesity.
- Insights into age-specific trends and risk factors.
- Recommendations for targeted interventions to reduce diabetes and obesity risks based on identified habits.

This methodology ensures a structured and comprehensive approach to understanding key habits influencing diabetes and obesity risk, leveraging survey data and robust analysis techniques.

Results:

Dietary Practices and Obesity:

- Poor dietary habits, including lack of balanced meals with proper proportions of carbohydrates, fats, and proteins, contribute to abdominal obesity.
- Abdominal obesity is a significant factor in insulin resistance and diabetes.
- Social media-induced binge eating exacerbates obesity, highlighting the impact of digital distractions

on eating habits.

Essential Habits for Managing Diabetes and Obesity:

- Track daily calorie intake.
- Create colorful food plates with varied nutrients.
- Ensure at least 7 hours of sleep per night.
- Avoid screen time during meals.
- Prefer homemade meals over fad diets.
- • Regularly check weight and blood sugar levels for early detection and control.

Respondents' Profile and Insights:

- Most respondents work in private organizations.
- They agree on the importance of monitoring calorie intake for controlling diabetes and obesity.
- Awareness raised by social media about food intake is significant but often lacks reliable scientific backing.

Weight and Physical Activity:

- Majority of respondents fall into above-average to significantly above-average weight categories.
- Abdominal obesity is prevalent among the Indian population.
- Millennials understand the importance of physical activity but often neglect to monitor their daily food intake.
- A colorful food plate is not a common practice among respondents, who often follow fad diets over traditional homemade food.

Impact of social media and Sleep:

- Social media significantly affects sleep across all generations.
- Lack of sleep is a major factor contributing to the increase in diabetes and obesity.
- Regular blood sugar monitoring is not common, indicating a critical gap in managing these conditions.

Conclusion:

- Addressing diabetes and obesity in India requires healthier eating habits, regular physical activity, sufficient sleep, and consistent monitoring of weight and blood sugar levels.
- Education on the benefits of traditional homemade food over fad diets and reducing screen time during meals is crucial.
- A comprehensive strategy is necessary to combat diabetes and obesity for a healthier future for the Indian population.

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Ravi Muppirala
Jeeva Therapeutics, USA

What should be the therapeutic target in the treatment of Type-2 Diabetes

Currently, Hyperglycemia is the chief therapeutic tar- get in Type-2 Diabetes (T2D). Some of the therapeutic approaches such as insulin and SGLT2 inhibitors focus mainly on reducing hyperglycemia. Some argu- ments are presented here to discover if it is the correct therapeutic target or if hypeinsulinemia should be con- sidered along with it. Previously we argued that why the preferred method to maintain euglycemia in T2D must be simulating the physiological pulsed endoge- nous insulin secretion.

It is known, that most types of peripherally adminis- tered insulin (PAI) have drawbacks; viz. being non-native, lacking c-peptide, not mimicking physiological insulin secretion oscillations (ISO) that reduce insulin receptor saturation, contributing to weight gain (often as visceral fat). Also, PAI is far less effective in countering hyperglycemia, as it doesn't mimic pancreatic release of insulin in terms of differential exposure - viz. higher levels to the liver and 30% to muscle and adi- pose tissues. Thus regulation of glycemic control by PAI results in increased obesity coupled with trigger- ing endothelial dysfunction. Also, PAI does not mimic insulin pulsatile release by islets. PAI administered for mere glycemic control results in higher insulin exposure to adipose and skeletal muscle, thereby inducing dysfunction not only in these organs but also in endothelium. Hence, it may be more beneficial to steer away from PAI.

The question of therapeutic target becomes important far before hyperglycemia establishes itself as a hallmark symptom in the advanced stages of type-2. Ma- jor issues involved in this metabolic disorders such as T2D is the time scale of 20- 30 years from initiation, detection, early stages, full blown stages and advanced stages of the disease. Interestingly, early stages of hy- perinsulinemia is common to many metabolic diseases viz T2D, NAFLD and CVD. It involves increased biomass of pancreatic β cells with hypertrophy, increased proinsulin/insulin (PI/I ratio) ratio and amy- loid plaques around the islets. It is not clear the progression of this stage into specific metabolic disorder. Contrarily, later stages of T2D is associated with loss of pancreatic β cells coupled with insulin resistance in liver, muscle and adipose tissues in conjunction with exaggerated endothelial dysfunction resulting in CVD. Hence, the question of stage specific therapeutic tar- get(s) become important far before hyperglycemia es- tablishes itself as a hallmark symptom in the advanced stages of T2D.

Regulation of intestinal epithelial barrier permeability is crucial at all stages of the disease. Similarly, hyperinsulinemia manifests even in very early stages of the disease involving ER stress. Additionally, relieving β- cell exhaustion by periodic inhibition of insulin secre- tion could decrease PI/I ratio and amyloid plaque for- mation. Excess visceral fat formation and subsequent insulin resistance is known to be mediated by inflam- mation involving free fatty acids and ceramides. Ex- cess PAI is known to elicit side effects

by decreasing autophagy, decreasing antioxidant enzyme synthesis and activating eNOS leading to Cardiovascular mor- bidity. In the early stages these are more pronounced at specific tissue regions and progressively become more systemic.

Although recent research demonstrates the merits of portally administered insulin, access to the portal vein is not practical. While DPP4-I/GLP-1, even with con- comitant glitazones, are good therapeutic approaches, they remain insufficient to achieve tight glycemic con- trol. Additionally, they fail to mimic the ISO and feeding correlated hepatic portal secretion. This is reflect- ed in healthy individuals, GLP-1 released from enterochromaffin cells interacts with vagus nerve to delay gastric emptying only 50% acts on hepatocytes and 20% on pancreas due its degradation in transport by endothelial DPP4. Thus GLP-1 analogs administered exogenously cannot mimic physiological insulin secre- tion.

Meanwhile it may be beneficial to revisit insulin secre- tagogues (IS) and modify traditional therapy, while improving approaches to endogenous secretion and concomitantly minimizing side effects. Dosage of sulfonylureas should be reduced to maintain a very basal secretion. This should be co-administered with a short acting IS (e.g. meglitinides) prior to feeding. This ap- proach can be titrated to mimic native secretion. Dys- functional aspects of ISO from β-cell should be given critical consideration in the therapy, which are likely to alleviate autocrine, paracrine and other signaling dependent secretion of glucagon, amylin and somato- statin. Reducing inflammation and enhancing NADPH in pancreatic β cells make IS more effective.

Thus, hyperglycemia may not be the right target. Mimicking physiological pulsatile insulin release, blocking temporarily/ intermittently insulin release while maintaining intestinal epithelial barrier could be more effective in the management of T2D. Therapeutic formulations to achieve these prop- erties in a continuous and chronic delivery are critical.

Biography:

Ravi Muppirala is a Biophysicst who has held academic appointments at T.I.F.R., Carnegie-Mellon, Syracuse University and University of Michigan. His expertise and interests span bio-molecular structure-dynamics, origins of primitive cells and type-2 diabetes..

G. Naresh Kumar
Jeeva Therapeutics, USA

Missing links in the aetiology and progression of Type 2 Diabetes

Type 2 diabetes (T2D) is caused by genetic and envi- ronmental factors such as diet, inactive lifestyle, chronic stress, disturbed circadian rhythms, etc. How- ever, most of these factors are also implicated for other chronic disorders such as non-alcoholic fatty liver dis- ease (NAFLD), obesity and cardiovascular disease. Metabolic syndrome with abnormal biochemical and physiological parameters leads to these metabolic dis- orders. Leaky gut, hyperinsulinemia, hyperglycemia, insulin resistance, hyperglyceridemia, hypercholes- terolemia and chronic tissue inflammation are associ- ated with metabolic dysfunction of liver, adipose tissue (subcutaneous and visceral), skeletal muscle, vascular endothelium, intestine and pancreas. The extent and nature of tissue specific dysfunction varies from the onset of metabolic syndrome to specific disease state. Hyperisulinemia is implicated for the onset of meta- bolic syndrome which further progresses to postpran- dial hyperglycemia, and hyperglyceridiemia. Hyperin- sulinemia itself is induced by increased ceramides and free fatty acids in lymph due to mesenteric lymphatic damage from chronic leaky gut. However, the contri- bution of islet inflammation, pancreatic β cell endo- plasmic reticulum stress and decrease in hepatic in- sulin clearance is not clear.

Hyperinsulinemia appears to be mediated by mesen- teric inflammation in response to the leakage of chy- lomicrons from damaged lymphatics. This leads to post prandial hyperglycemia with decrease in skeletal muscle glucose uptake resulting in healthy obesity. At this stage, proinflammatory cytokines like ceramides and free fatty acids are elevated in lymph but not in blood. These initial stages further change to hyper- triglyceridemia and increase in fasting glucose levels associated with proinflammatory ceramides and free fatty acids presence even in blood. However, the na- ture of metabolic disorder exhibited in an individual is not clear. Accumulation of fat in liver leads to NAFLD, fasting hyperglycemia to pre-diabetes and increased oxidized Low-density Lipoproteins (oxLDL) to formation of atherosclerotic plaques.

In case of T2D, lymph node dysfunction causes insulin resistance in pancreas, liver, skeletal muscle, adipose tissue and endothelial cells. However, there is no clari- ty on the contribution of insulin resistance of these organs responsible for the progression from healthy

obesity (Subcutaneous adipose tissue) Unhealthy Obesity (Visceral adipose tissue) prediabetes T2D microvascular complications macrovascu- lar complications. Many clinical parameters are corre- lated with the metabolic dysfunction such as HbA1C, glucose intolerance, free fatty acids, ce- ramides, LDL and HDL.

Diabetic complications are correlated with HbA1C levels > 8.0 in which fasting glucose levels are > 10 mM and these conditions favor advanced glycation end product (AGE) mediated endothelial and extra cellular matrix damage. In a vicious cycle, AGE prod- ucts increase oxidative damage involving endothelial Nitric

oxide synthase and NADPH oxidase. Increased reactive oxygen species react with LDL into oxidized form and damage endothelial cells. Monocytes enter intima at the damaged sites and become foam cells which accumulate oxLDL triggering high levels secre- tion of IL6, TNFα and IL1β. At these sites endothelial cells undergo dedifferentiation into macrophages and osteocytes in atherosclerotic plaques. Rupture of ma- ture atherosclerosis plaques progressively lead to mi- cro- and macro-vascular complications. The role of chylomicrons and de novo lipogenesis towards Lipo- toxicity in organs and Visceral adipose inflammation may provide an insight to these processes. Interesting- ly, chylomicrons in normal individuals get converted into remnants within 30 min while very low density lipoproteins are present for a few hours for becoming remnants.

Above mentioned processes describe common patho- physiological processes but individual pathogenicity depends on the pronounced component. Moreover, gender dependent pathophysiological parameters to specific metabolic disorder are unclear. In cases of Polycystic ovarian syndrome, estrogen dysfunction leads to severe insulin resistance and T2D. Similarly, hypothyroidism leads to obesity and thyroid receptor agonist Resmetirom is used for the treatment of NAFLD. However, only 10% and 5% of T2D patients have clinical and subclinical hypothyroidism, respec- tively. While hypothyroidism is prevalent in women, there is no significant gender based difference in T2D incidence. A challenging issue is to explain how indi- vidual progression of T2D happens in individuals without micro- or macro-vascular complications or Hypertension.

Biography:

G. Naresh Kumar is Retired Professor, Department of Biochemistry/, The Maharaja Sayajirao University of Baroda, Gujarat, India. His expertise and interests span Designer Probiotics, Metabolic Engineering of Bacteria, Metabolic Syndrome, Origins of primitive cells and Type-2 diabetes. The research dealt with exploiting probi- otic Escherichia coli strains for delivering antioxidants to ameliorate toxic effects of heavy metals, arsenite, ethanol, carbon tetrachloride, dimethyl hydrazine. E. coli has been modified to confer beneficial effects of delaying ageing, improving iron absorption and decreasing deleterious effects of dietary high fructose and sucrose.

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.

Khalid Saifullah
Chevron Specialized Hospital, Bangladesh

Depression and Controlled vs Uncontrolled Diabetes mellitus (Type 1 & Type 2)

Background: Depression and diabetes are common health problems, leading to high morbidity and mortality worldwide. Depression is a known risk factor for diabetes, and people with diabetes mellitus are more likely to be depressed. Thus, depression may severely impact diabetes management and increase the risk of complications. The current study estimated the prevalence and severity of depression among patients with diabetes mellitus as opposed to healthier subjects.

Methods: This cross-sectional case-control study included 400 patients with type 2 diabetes mellitus who attended the outpatient clinic center of diabetes in Ukhia, chakoria Coxs Bazaar Bangladesh as well as 200 healthy controls. Subjects were asked to sign written informed consent then responded to self-reported questionnaire using the Beck Depression (BDI) Inventory. Data collected included socio-demographic data, and the 21 components of Beck Depression scale, a comparison between diabetic patients with good control and poor control was undertaken.

Results: They were 600 subjects. 55% were males; male to female ratio was 1:1.2. Two hundred and Fifty 62.5% of diabetic patients had depression. Mild, moderate, and severe depression was reported in 35%, 15%, and 2.3% respectively. A statistically significant difference was found (P< 0.005), and an odd ratio of 0.245 regarding depression between diabetic patients and control subjects. A high significant statistical difference (P value< 0.0001) was evident between patients with poor and good diabetes control as regarding the prevalence of depression (85.5% vs.45.3%).

Conclusions: Depression was more common among patients with diabetes mellitus; Furthermore patients with depression had poor diabetes control.

Keywords: Depression; Diabetes mellitus

Nurul Huda Likhon
Shahid ATM Jafar Alam Diabetic & Community Hospital, Bangladesh

Depression and Controlled vs. Uncontrolled Diabetes mellitus (Type 1 & Type 2)

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Conclusions: Depression was more common among patients with diabetes mellitus; Furthermore patients with depression had poor diabetes control.

Keywords: Depression; Diabetes mellitus

Mariya Tabassum
Abdul Malek Ukil Medical College, Bangladesh

Comparing Effectiveness of the three Novel Lipid Indices in predicting Metabolic Syndrome in young Bangladeshi Adults : A Cross-sectional study

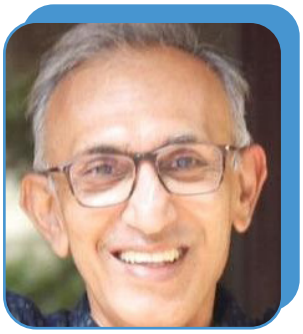
Background : Metabolic Syndrome is directly linked with the development of Type 2 DM, cardiovascular diseases and stroke. Due to ethnic predisposition of the people of this region, Bangladesh is currently facing "metabolic syndrome" as a major public health challenge, with huge economic and social burdens. A number of studies in the recent years have reported three newer lipid indices, namely, LAP (Lipid Accumulation Product), TyG (Triglyceride-Glucose) index and VAI (Visceral Adiposity Index), as better performers than conventional markers, in predicting metabolic syndrome. These are gender-specific mathematical formulae, comprising anthropometric and biochemical parameters .

Aim: To establish the diagnostic cut-off values of the novel lipid indices and compare their effectiveness with one another in detecting metabolic syndrome in young Bangladeshi adults.

Study Design & Methods: 200 adults from 19 to 45 years of age and meeting all the inclusion criteria, were recruited for this cross-sectional study. Anthropometric measurements & blood pressure of the study subjects were recorded in preformed data sheets. Then their fasting blood glucose, serum Triglyceride & serum HDL-C concentrations were estimated. Study subjects were then classified into two groups, having metabolic syndrome or not, depending on the "National Cholesterol Education Program Adult Treatment Panel III (NCEP ATP III)" criteria.

Results: Sensitivity, Specificity, Positive Predictive value and Negative Predictive value of LAP as diagnostic marker were 90.91%, 75.00%, 74.07% and 91.30% respectively; Sensitivity, Specificity, Positive Predictive value and Negative Predictive value of TyG index as diagnostic marker were 95.45%, 79.46%, 78.50% and 95.70% respectively; Sensitivity, Specificity, Positive Predictive value and Negative Predictive value of VVI as diagnostic marker were 92.05%, 75.00%, 74.31% and 92.31% respectively. Prevalence of metabolic syndrome among the study subjects was 42.00%, according to the NCEP ATP III criteria. 54.00% of the total study subjects had metabolic syndrome based on the optimal cut-off value of LAP; 53.50% of the total study subjects had metabolic syndrome based on the optimal cut-off value of TyG index; 54.50% of the study subjects had metabolic syndrome based on the optimal cut-off value of VAI.

Conclusion: LAP, TyG index and VAI, all showed to be effective predictors of metabolic syndrome, with VAI showing slightly stronger predictive power than LAP and TyG index in case of young Bangladeshi adults.



V K Sashindran
KS Hegde Medical Academy, Nitte (deemed) University, India

Impact of A Low-cost Multi-Component Strategy on Health of Elderly Diabetics in An Indian Urban Slum

Aims: The primary objective of this study was to study the impact of a low-cost multi-component strategy on HbA1c levels in elderly diabetics. The secondary objectives were to assess its impact on obesity and blood pressure.

Methods: A case - control study where subjects were elderly diabetics (>60) living in an urban slum (n= 65). Subjects in the control group (n = 31) were asked to continue their medications and follow lifestyle advice. Those in the intervention group (n = 34), were administered 6 weekly individual counselling sessions on diabetic treatment, diet and lifestyle modifications and were provided with pedometers to keep track of their daily step counts. Short message service (SMS) was used to post diabetes-related messages. Study period was 12 weeks. Weight, waist and hip circumferences (WC, HC), systolic and diastolic blood pressure (SBP and DBP) and HbA1c were measured for all subjects at the start and end of the study.

Results: After 12 weeks of intervention, there was a significant reduction in SBP (p = 0.030), WC (p = 0.016), HC (p = 0.030) and improved drug compliance (p = 0.00) in the intervention group as compared to the control group. There was no significant change in DBP or HbA1c. The pedometer count did not show a significant correlation with reduction in HbA1c.

Conclusions: The multicomponent strategy significantly reduced SBP, WC and HC and improved treatment compliance in elderly diabetics in an urban slum.

Keywords: Elderly diabetics, pedometer, HbA1C, Blood pressure, Obesity, treatment compliance

Mohanad Mahdi Thumad Al-kaisey
Baghdad College of Medical Sciences, Iraq

Correlation of staging and risk factors with cardiovascular autonomic neuropathy in patients with type II diabetes mellitus

The impairment of cardiovascular autonomic control among the underdiagnosed complication of diabetes mellitus (DM) with a high prevalence rate of up to 60% in type 2 DM (T2DM). Cardiac autonomic neuropathy (CAN) is an independent risk factor for cardiovascular mortality, arrhythmia, silent ischemia, any major cardiovascular event, and heart failure. We aimed to evaluate cardiovascular autonomic activity by different physiological maneuvers, study risk factors for diabetic CAN including age, gender, duration of diabetes, body mass index (BMI), and glycemic control, and correlate CAN stage with risk factors. One hundred and forty-two T2DM patients consisted of 62 males and 80 females and 100 volunteers as a control sample. Cardiac autonomic functions were assessed by Ewing's tests. Glycated hemoglobin (HbA1c), body weight, height, body mass index (BMI), and waist-hip ratio (WHR) were also measured. Cardiovascular autonomic functions and Ewing scores were significantly different in people with diabetes when compared with control healthy subjects. Ewings test values and Ewing scores were significantly different between diabetics with and without CAN and within patients with different CAN staging. People with diabetes with CAN have a significantly longer duration of disease when compared to those without CAN. A strong association has been found between CAN severity and patient age, duration of disease, HbA1c severity, and the WHR ($P< 0.001$) but not with BMI. The duration of disease and HbA1c level appear to be associated with the development of CAN ($P= 0.001$ and $P= 0.008$, respectively). The poorer glycemic control and the longer the duration of the disease, the higher the prevalence of CAN in T2DM. Age, duration of disease, WHR, and HbA1c are well correlated with the severity of CAN. Parasympathetic impairment is more sensitive to the detection of autonomic dysfunctions than do sympathetic impairment.

Hanaa Tarek El-Zawawy
American Hospital Dubai, United Arab Emirates

Subclinical hypothyroidism: To treat or not to treat?

Subclinical hypothyroidism (SCH) represents a challenge in clinical practice. SCH is a form of mild hypothyroidism, meanwhile, it poses multiple risks with many adverse clinical consequences. SCH treatment has been a matter of debate long ago and significant controversy still exists as to whether to treat or not to treat. The treatment of SCH has been the subject of an enormous amount of work with many published studies. The American Thyroid Association guidelines settled some instances where the treatment of SCH is to be considered. The treatment of SCH should be individualized given the patient's profile and risk assessment.

Biography:

Hanaa Tarek El-Zawawy is an Endocrinology Consultant at American Hospital Dubai and an Assistant Professor of Endocrinology at Alexandria University Faculty of Medicine where she had her doctorate degree in Endocrinology in May 2015 at the age of 31 years.

El-Zawawy is a member of the Egyptian Society of Endocrinology and Obesity as well as the European Society of Endocrinology. She participates in many national & international conferences and workshops every year.

She authors 18 peer-reviewed publications. She was cited 147 times, H-index=7. Also, she is an active reviewer in many international journals and receives a yearly award from the publisher "WILEY" for her contributions.

Anasuya Ganguly
BITS-Pilani, KK Birla Goa Campus, India

Testing new approaches for Diabetes Treatment- from Tissue Engineering to 3D bioprinting

Long Term Sustained Growth of Insulin Producing Cells Using Agarose-Chitosan Coated Silver Nanocomposites

Diabetes is a group of diseases characterized by high levels of blood sugar for an extended period. To overcome the adverse effects of existing drugs, we have taken regenerative medicine as an essential treatment, in other words we have used tissue engineering as a foundation for the repair of pancreatic cells secreting insulin. Different polymeric scaffolds have been explored for pancreatic tissue engineering. In the current study, a continuation of our preceding work we have attempted to test the role of previously synthesized agarose-chitosan coated silver nanocomposite scaffold (AG-CHNp) for long-term growth of pancreatic cells. Pancreatic cells were isolated from BALB/c mice and were characterized by dithizone (DTZ) staining, real time polymerase chain reaction (RT-PCR), western blotting, and flow cytometry for characteristic pancreatic markers. The isolated population of cells was grown on scaffolds and its effectiveness towards insulin secretion was studied. The isolated population was found to be positive for glucagon, PDX-1 and Pax-4, while a 200-fold change transcript level of insulin was observed. Overall, the study demonstrates the suitability and application of AG-CHNp for pancreatic tissue engineering.

Development of edible 3D printed Chewable Glimepiride extended-release 2 mg tablets for Diabetes treatment

Many types of medication are available in the market for Diabetes. Many have side effects. Sometimes patient needs a certain dosage that is not readily available. Using 3D printing technology, we have developed edible 3D printed Chewable Glimepiride extended-release 2 mg tablets for customized dosaget. The drug is mixed with different pharmaceutical approved (by regulatory authorities) compounds (Meltodextrin, starch etc). These have been tested for rheological properties, biocompatibility, dissolution profile and content uniformity. This will help patients with the perfect dosage.

Keywords: agarose, chitosan, scaffolds, islets, insulin, diabetes, tissue engineering, nanocomposites, 3D printing, Glimepiride

Biography:

Dr. Anasuya Ganguly is a Professor in the Department of Biological Sciences, BITS Pilani, K K Birla Goa Campus, Goa since December 2005. Her area of research expertise is in Cell and Molecular Biology. She works on stem cells, tissue engineering and environmental toxicology. She has more than 30 peer reviewed publications and one book chapter to her credit. She has three Indian patent applications. She is also co-director of two start-ups, incubated at BITS BIRAC BioNEST called “Tissues Engineered Pvt. Ltd.” and ‘Bactreat Environmental Solutions LLP”

Pratibha Gupta
Central State University, USA

The Role of Nutrigenomics in Diabetes and Obesity Prevention

Diabetes and obesity are critical global health challenges marked by intricate interactions between genetic predisposition and lifestyle factors, notably diet. Nutrigenomics, the study of how nutrition influences gene expression and how genetic variations affect nutritional responses, offers promising avenues for personalized prevention strategies for these conditions. These abstract reviews the role of nutrigenomics in preventing diabetes and obesity, emphasizing how personalized nutrition based on genetic information can improve health outcomes and mitigate disease risk. A literature review was conducted, focusing on studies that explore genetic variations affecting nutrient metabolism, the efficacy of gene-based dietary interventions, and the impact of nutrition on epigenetic modifications and the gut microbiome in relation to diabetes and obesity prevention. Variants in genes such as FTO and TCF7L2 have been linked to obesity and type 2 diabetes, respectively. These variations can influence how individuals metabolize nutrients, impacting their susceptibility to these conditions.: Research indicates that dietary recommendations tailored to genetic profiles can significantly improve metabolic outcomes. For example, individuals with certain FTO gene variants may experience greater benefits from reduced carbohydrate intake, while those with specific TCF7L2 variants might better manage blood glucose levels with high-fiber diets. Nutritional components can induce epigenetic changes that affect gene expression and metabolic health. These modifications can potentially prevent or delay the onset of diabetes and obesity. The gut microbiome's role in nutrient metabolism and its interaction with the host's genetic makeup highlights the importance of considering both genetic and microbial profiles in personalized nutrition strategies. Nutrigenomics offers significant potential for diabetes and obesity prevention by enabling personalized nutrition that aligns with individual genetic and epigenetic profiles. Tailoring dietary interventions to genetic predispositions can optimize metabolic health and reduce disease incidence.

Biography:

gupta@centralstate.edu

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