e-CME ON WORLD DIABETES DAY 2020

CONDUCTED BY DEPARTMENT OF COMMUNITY MEDICINE,

TAGORE MEDICAL COLLEGE AND HOSPITALS, CHENNAI

DATE: 18th NOVEMBER 2020

VENUE: Google Meet
WORLD DIABETES DAY

On 14\textsuperscript{th} of November, the International diabetes federation celebrates

\textbf{World Diabetes day} every year since 1991 in response to growing concerns about the escalating health threat posed by diabetes.

The campaign is represented by a blue circle logo. The blue circle is the global symbol for diabetes awareness. It signifies the unity of the global diabetes community in response to the diabetes epidemic.

Every year, the World Diabetes Day campaign focuses on a dedicated theme that runs for one or more years.

\textbf{The theme for World Diabetes Day 2020 is The Nurse and Diabetes.}
DIABETES: NURSES MAKE THE DIFFERENCE

Education and funding are vital to support healthcare professionals in the fight against diabetes.

Learn more:
www.wdiabetes.org/ndi
MultipleDiabetes

DIABETES: NURSES MAKE THE DIFFERENCE

Have a look at our materials available for use in awareness activities!

Find out more:
https://www.wdiabetes.org/resources
NursesMakeTheDifference

DIABETES: NURSES MAKE THE DIFFERENCE

59% of people with diabetes are nurses

6 million more nurses needed
DEPARTMENT OF COMMUNITY MEDICINE
Cordially welcomes all the Faculty, CRRIs and Students to the e-CME on World Diabetes Day-2020

DATE: 18/11/2020
Time: 9 AM onwards

GUESTS SPEAKERS

Dr. Thirunavukkarasu M.D.,
Professor & HOD,
Dept. of Community Medicine,
KIMS

Dr. Subashini Devi, MBBS,
Fellowship in Diabetology,
Dhanyaa heart and diabetes
center, Salem

Dr. N. Gunasekaran M.D., DTCD,
Dean

Dr. Kumudha Lingaraj M.D., D.A.,
Medical Director

Dr. K. Ravindran M.D
Dean – Academics

Dr. K. Sivaprakasam M.S.,
Medical Superintendent

Dr. A. Balaji MD
Professor & HOD, Community Medicine
# PROGRAM SCHEDULE

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<td>9.00 – 9.15 AM</td>
<td>Registration</td>
<td>Dr. A. Balaji, Prof &amp; HOD, Dept. of Community Medicine, TMCH</td>
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<td></td>
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<td>Welcome and Opening Remarks</td>
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<td>Dr. Archana G.S. Diagnosis of Diabetes</td>
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<td>Dr. N. Aishwarya Treatment of Diabetes</td>
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<td>Dr. Aarthi K.B COVID &amp; Diabetes</td>
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<td>Dr. Aravinth K.V.</td>
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<td>II</td>
<td>9.15 - 10.00 AM</td>
<td>CRRI PRESENTATIONS</td>
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<td>Introduction &amp; Epidemiology</td>
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<td>Dr. Archana G.S. Diagnosis of Diabetes</td>
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<tr>
<td>III</td>
<td>10.00 - 11.00 AM</td>
<td>Recent advances in management of Diabetes</td>
<td>Dr. V. Subashini Devi</td>
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<td>Guest speaker, Diabetologist</td>
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<td>IV</td>
<td>11.00 AM – 12 Noon</td>
<td>Nurse and Diabetes-World Diabetes Day theme</td>
<td>Dr.D.Thirunaaukarasu, MD, Professor &amp; HOD, Dept. of Community Medicine, KIMS</td>
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<td>V</td>
<td>12.00 – 12.45PM</td>
<td>E-poster, Essay writing &amp; photo GIF Collage competition</td>
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<td>VI</td>
<td>12.45PM – 1PM</td>
<td>Valedictory &amp; Vote of Thanks</td>
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Organizing Committee Members

Organizing Chairman: Dr A. Balaji, Prof & HOD, TMCH

Event Organisers:

E poster Competition: Dr A. Balaji, Prof & HOD, TMCH
                Dr Sree T Sucharitha, Prof, TMCH
                Dr Sivagurunathan, Asso Prof, TMCH
                Dr Karthik R.C, Assistant Prof, TMCH

Essay Writing : Dr. E Suganya, Assistant Prof, TMCH
                Dr. Vikram.A, Assistant Prof, TMCH

Photograph-Gif Competition: Dr Radhakrishnan. A, Assistant Prof, TMCH

Logistics: Assistant Prof, Dr. Vikram.A and Assistant Prof, Ezhilvanan. M
On the day....

The event began at 9.00 AM. After the participants logged in, the event was formally inaugurated by Dr. A. Balaji, Professor and HOD, department of community medicine, TMCH, who delivered the welcome address. CRRI’s of TMCH, presented a short yet informative webinar on various topics pertaining to diabetes namely – “Introduction-Epidemiology-Diagnosis-Treatment-COVID and Diabetes”.
Guest speaker Dr. Subashini Devi.V, diabetologist, orated her guest lecture on “RECENT ADVANCEMENTS IN DIABETES MELLITUS”. In her speech, she highlighted the following points-

Guidelines advocate lifestyle management as a first measure for prevention and management of diabetes

- Balanced diet comprising of total fat intake <35%, saturated fat <10%, mono-unsaturated fatty acids >10%, dietary fibre intake >40g/day and salt intake <5g/day
- Moderate to vigorous physical activity ≥ 150 min/week and combination of aerobic exercise and resistance training is recommended
- DSMES is a patient-centric teaching tool that helps avoid diabetes complications and is recommended for all patients with diabetes
- Early intensive glycaemic control in T2D reduces the risk of microvascular complications in the long term
- HbA1c targets vary, with the goal for many patients being <7% (53 mmol/mol)
- There are several classes of T2D medications, including metformin, SGLT-2 inhibitors, GLP-1RAs, DPP-4 inhibitors, TZDs, sulphonylureas and insulins
- Insulin administration represents the mainstay of T1D treatment; mode of delivery can be MDI or CSII; basal-bolus insulin is the regimen of choice
- Traditional approach is to use short or rapid-acting analogue at mealtime and basal insulin OD or BD. Titration can be patient specific.

The session was chaired by HOD of General Medicine, TMCH, Dr. Sharavanan.
The second guest speaker, Dr. Thirunaaukarasu, MD, Professor- department of community medicine, KIMS. He enlightened the listeners in the “ROLE OF NURSES IN THE MANAGEMENT OF DIABETES”. He enlightened the role of nurses and paramedical professionals in the management of diabetes mellitus.

An E-Poster competition was held, the theme being centred on world diabetes day. Several participants from various colleges submitted entries out of which 11 Undergraduate E-Posters and 4 Post graduate poster were selected for presentation. The session was chaired and judged by Dr. Sree Sucharitha, Dr. Sivagurunathan, Dr. R.C. Karthik and Dr. A. Radha Krishnan.

Winners of the E-Poster, Photo-collage and essay writing competitions were announced by Dr. A. Balaji.
Vote of thanks was delivered by Dr. Sivagurunathan
There were totally 11 Poster Presentations predominantly by the Under graduates and about 4 Poster presentations from Post graduates. This approach was intended to bring out the student’s best effort by inspiring creativity and challenging student community to utilize the opportunity to analyze and search within them to identify their true potential.

List of Postgraduate Poster Presentations

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<th>Sl.no</th>
<th>Name of the Student</th>
<th>Topic</th>
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<td>1</td>
<td>Keerthana</td>
<td>Insulin delivery devices</td>
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<tr>
<td>2</td>
<td>R.Nivetha</td>
<td>Complications of Diabetes Mellitus</td>
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<td>3</td>
<td>Vinodhraja s</td>
<td>Role of Nurse in Diabetes</td>
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<tr>
<td>4</td>
<td>Kavitha</td>
<td>Impact of Covid-19 Lockdown on Glycemic Control in Patients with Diabetes</td>
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# List of Abstracts for Undergraduate Poster Presentation

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<th>Name</th>
<th>College</th>
<th>Title</th>
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<tr>
<td>1</td>
<td>Amrita Teresa M</td>
<td>Tagore Medical College and Hospital</td>
<td>DIABETES MELLITUS IN THE YOUNG AND COVID-19 THE OMINOUS DUO</td>
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<tr>
<td>2</td>
<td>Chandini Gandepalli</td>
<td>ACS Medical College and Hospital</td>
<td>STOP STRESSING, START LIVING KICK OUT DIABETES</td>
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<tr>
<td>3</td>
<td>Divya Gera</td>
<td>ACS Medical College and Hospital</td>
<td>IS TELEMEDICINE A GOOD FIT FOR DIABETICS IN COVID 19?</td>
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<td>4</td>
<td>Dave Matthew</td>
<td>Tagore Medical College and Hospital</td>
<td>LIFESTYLE AND DIABETES</td>
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<td>5</td>
<td>Karthick M</td>
<td>Tagore Medical College and Hospital</td>
<td>Role of Telemedicine in diabetes management during CoVid - 19 pandemic</td>
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<td>6</td>
<td>R. Niranjani</td>
<td>Tagore Medical College and Hospital</td>
<td>HEALTH EDUCATION ON DIABETES</td>
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<tr>
<td>7</td>
<td>Nivedhana.P</td>
<td>Tagore Medical College and Hospital</td>
<td>NURSES MAKE THE DIFFERENCE</td>
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<tr>
<td>8</td>
<td>Raghunandan Ramanathan</td>
<td>Tagore Medical College and Hospital</td>
<td>NEW ONSET OF DIABETES MELLITUS PRECIPITATED BY COVID19</td>
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<td>9</td>
<td>K. Thenmozhi</td>
<td>Tagore Medical College and Hospital</td>
<td>AVENGERS –UNNOTICED</td>
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<td>10</td>
<td>VIGNESH RAM B</td>
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<td>EXERCISE AND DIABETES</td>
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<td>M VIKASKUMAR REDDY</td>
<td>Tagore Medical College and Hospital</td>
<td>DIABETES IN COVID CAUSE-EFFECT</td>
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PG Poster

1. Keerthana

INESULIN INHALERS
Powdered insulin administered via inhalers
powder inhaled, dissolves in lung immediately
dumped into the bloodstream and start working

AFREZZA

EXUBERA

INSULIN PEN AND JET INJECTORS
Contains insulin cartridge and dial
Less injection pain, to facilitate multiple subcutaneous injections

2. R. Nivetha

WORLD DIABETES DAY
14TH NOVEMBER

BY
DR. R. NIVETHA
1ST YEAR MD CM, TMCH

COMPLICATIONS OF DIABETES MELLITUS

IMMEDIATE COMPLICATION
HYPOGLYCEMIA
DKA & HHS

LONG TERM COMPLICATION
MICROVASCULAR
MACROVASCULAR
NONVASCULAR

GLYCEMIC CONTROL
DIET
MEDICATION
PHYSICAL EXERCISE
3. VinodhrajaS

Role of Nurse in Diabetes

• Screening of persons above 30 years for diabetes

• Educate about home glucose monitoring and manage glucose variations.

• Review factors in glucose instability like missing meals, infection, or other illnesses.

• Encourage patient to choose foods having a low glycemic index, higher fiber, and low-fat content.

• Discuss how patient antidiabetic medications work and its side effects.

• Check viability of insulin, checking expiry dates of medications, inspecting insulin for cloudiness if it is normally clear, and monitoring proper storage.

• Check injection sites periodically. Insulin absorption can vary day to day in healthy sites and is less absorbable in lipohypertrophic tissues.

• Maintain proper records and follow up register of patients.
Impact of COVID-19 Lock Down on Glycemic control in patients with Diabetes

Dr. Kavitha, PG, Department of Community Medicine, Tagore Medical College and Hospital, Chennai

1. Introduction:
Diabetes is a chronic, metabolic disease characterized by elevated levels of blood glucose, which leads over time to serious damage to the heart, blood vessels, eyes, kidneys and nerves. Adaptation of good lifestyle modification which includes balanced diet, exercise, proper sleep & psychological well-being with proper medication under medical guidance are the pillars for good glycemic control. All these pillars may be shaken in the lock down period.

2. Objective:
To study the impact of COVID-19 lock down on glycemic control in patients with Diabetes.

3. Material & Methods:
- Study Design: Cross sectional study
- Study Place: Urban Health Centre, Chrompet
- Study Duration: one week
- Study population: 25 type-2 diabetic patients who had attended OPD in the last one week and had good glycemic control in the past without any chronic complications, and willing to participate were included. This was identified based on previous follow up clinical records.
- The inclusion criteria for enrolment into the study included the following: (1) adult patients with previously diagnosed with T2DM on treatment, and (2) willing to participate in the study.
- Study Variables: Random Blood Sugar, Fasting and Post prandial Blood Sugar
- Statistical Methods - Using IBM SPSS paired T test, statistical analysis was done and fasting, post prandial and random blood sugars before and after lock down were compared.

4. Results:
Table 1: Overall Mean Blood Glucose levels before Lock down:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean [mg/dL]</th>
<th>Range [mg/dL]</th>
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<td>120 ± 20</td>
<td>70-180</td>
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<tr>
<td>Random Blood Sugar</td>
<td>180 ± 20</td>
<td>120-300</td>
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Table 2: Overall Mean Blood Glucose levels after Lock down:

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Table 3: Comparison of Mean Blood Glucose before and after Lock down:

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Figure 1: Comparison of Mean Blood Glucose before and after Lock down:

5. Conclusion:
This study showed that overall glycemic control got deranged during the lockdown period. Lifestyle changes, psychological stress, difficulty in getting medication and medical advice were identified as possible factors responsible for derangement of glycemic control. Thus, multidisciplinary approach is required which is patient centric and addresses the various issues like psychological stress, diet exercise along with proper medication is required for achieving good glycemic control.

6. References:
UG Posters:

1. Amrita Teresa M

**Diabetes Mellitus in the Young and COVID-19, The Ominous Duo**

**Introduction**
- Diabetes has been increasingly observed in the younger population and in the so-called pre-diabetic stage.
- COVID-19 has affected such individuals during the pandemic adversely.

**Types of DM in young patients**
- **Type 1 DM** - insulin dependent/ juvenile diabetes
- **MODY**
  - an intermediate form of Diabetes Mellitus
  - occurring before 25 years of age,
  - Autosomal Dominant condition
  - Responds to strict lifestyle changes and OHAs
- **LADA**
  - Characterised by progressive beta cell failure, affects during 2nd and 3rd decade

**Type 1 DM and COVID-19**
- Hyperglycemia induced immune dysfunction
- T1DM are found to present more commonly with DKA in the presence of COVID-19

**Effects of lockdown**
- Lack of physical activity
- Unhealthy dietary practices
- Insufficient sleep
- Psychologic stress

**Effect of COVID-19 on development of T1D**
- New-onset diabetes that is defined by:
  - Hyperglycemia
  - Confirmed Covid-19
  - A negative history of diabetes
  - History of a normal HBA1C.
- **Mechanism:**
  - Viral infections -> virus amplification cycle -> autoimmune insulitis and pancreatic β-cell destruction
  - Circulating viral antigens -> directly damage β-cells -> release of sequestered islet antigens
  - Presented by overexpressed MHC class I proteins to the immune system
  - Increased autoantibody generation
  - Damage β-cells

**Conclusion**
- Early diagnosis curbs and delays complications
- COVID-19 has worsened situation for diabetics
- Strict lifestyle changes are a must

Done by Amrita Teresa and Sneha M - TMCH 2015 batch
STOP STRESSING, START LIVING
KICK OUT DIABETES

MANAGING DIABETES IS NOT A SCIENCE, IT IS AN ART

- MENTAL HEALTH IS NOT A DESTINATION, BUT A PROCESS. IT’S ABOUT HOW YOU DRIVE, NOT WHERE YOU ARE GOING.
- PEOPLE WITH DIABETES DEVELOPING COVID-19 ARE AT INCREASED RISK FOR COMPLICATIONS & MORTALITY

- PSYCHOLOGICAL STRESS HAVE BEEN THE MOST CONTRIBUTING FACTOR FOR THE INCREASE IN DIABETES DURING LOCKDOWN

- PSYCHOTHERAPY INTERVENTIONS SHOWED DIFFERENTIAL EFFECTS ON ADHERENCE, METABOLIC CONTROL, COPING WITH STRESS IN DIABETES PEOPLE

- STRESS MANAGEMENT AND PSYCHOTHERAPY INTERVENTIONS SHOWED SIGNIFICANT PROMISES FOR ADULTS TO COPE WITH THEIR DIABETES-RELATED DAILY STRESSORS

- CONTINUATION OF GOOD DIETING PRACTICE, SAFE PHYSICAL ACTIVITIES & REGULAR GLUCOSE MONITORING.

- MEASUREMENTS SUCH AS TELE MEDICINE SERVICE & DRUG DISPENSING FOR EXTENDED DURATIONS TO HOME, SHOULD BE ADOPTED, REDUCE EXPOSURE OF DIABETES PATIENTS WITH ENSURING UNINTERRUPTED CONTINUING OF CARE.

NAME: G.V.CHANDINI
REG NO: 17201011105033
IS TELEMEDICINE A GOOD FIT FOR DIABETICS IN COVID 19?

What is Telemedicine?
WHO has defined Telemedicine as “the delivery of health care services, regardless of distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities”.

Mode of communication may be either synchronous (real time) via video, audio and text or asynchronous e-mails. Most patients involved in teleconsultation may be patient to doctor, caregiver to doctor, doctor to doctor and healthcare worker to doctor.

Why is Telemedicine required in Diabetes?
Diabetes is a chronic disease, which requires frequent visits to the physician for lifestyle advice and adjustment of treatment. Telemedicine can help the patients get in touch with their physician from the comfort of their home, and away from hospitals which could increase chances of coronavirus infection. Physicians can interact with the patient, analyse history, analyze their self-monitored blood glucose charts (SMBG) and self-monitored blood pressure (SMBP) values and give advice.

Pros
- Telemedicine helps hospitals provide better treatment for remote patients and their families.
- It improves communication between patients and specialists during this pandemic.
- Telemedicine facilitates proper monitoring of vital signs like blood pressure, blood sugar levels, and other required activities from home during this COVID-19 outbreak.
- Most importantly, telemedicine limits the patients exposure to the virus and other sick people.
- It helps doctors to understand glucose disturbances and quickly handle hospitalization and medical problems.
- Health Professionals educating patients about common symptoms of COVID-19 leads to patient reporting to health care authorities and in this way Test, Treat, Isolate, and Contact tracing policy of WHO implemented successfully.
- It reduces no-show costs.
- Better glycaemic control in a timely fashion.
- It reduces the risk of development of negative outcomes in mental health precipitated by restrictions of social contact and loss access to health services.
- It saves lives in the emergency situations, while there is no time to take the patient to a hospital.
- Modern innovations in information technology such as, mobile collaboration has enabled easy information sharing and discussion about critical medical cases among healthcare professionals from multiple locations.
- Patients can receive clinical healthcare from their home without arduous travel to the hospital and reduced the transportation expenditure for both the doctor and patient.
- Last but not the least, time in waiting room is avoided.

Cons
- Privacy and confidentiality of patients data.
- It may be harder to create a personal connection between the doctor and patient.
- Absence of laboratory and radiology reports.
- Internet services are still not widely available in many rural areas.
- The overall cost of telecommunication systems, especially data management apparatus and practical training of medical professionals is huge.
- Not all illnesses can be diagnosed remotely.
- Technology can fail. No matter how good your technology is, it’s not immune to internet outages, overloaded servers, and incompatible client hardware.
- There may be a lack of adoption. Patients might not use telemedicine because they have a hard time with new technology, aren’t aware of their options, or simply because of is communication.
- Internet services are still not widely available in many rural areas.
- Privacy in communication can result in grave consequences.
- Teleconsultation is also fraught with many legal issues such as obtaining explicit patient consent.
- Wrong clinical decisions (at times), due to non-examination of the patient and relying on their investigation reports and history.
- Many patients may not feel satisfied without having a face-to-face contact with the treating doctor.
- Adulterating medicines without an appropriate diagnosis/provisional diagnosis, and Prescribing medicines that are prohibited by the government.
- Not all people can afford blood glucose meters, insulin pumps, continuous glucose monitor (CGM) and insulin pens.

Similarities in Telemedicine and in-person visits
- Duration of a consultation
- Patient identification
- Total number of patients
- Core principles of healthcare

What can be done?
- Privacy and confidentiality of patients data should be maintained.
- Physical activity advice with instruction for home exercises should be given.
- Consent of the patient, either implied or explicit should be obtained.
- Advice on vaccination like for influenza or pneumonia should be stressed.

By Divya Gera
ACS Medical College
Lifestyle and Diabetes

Diabetes mellitus is a disorder in which the body does not produce enough or respond normally to insulin, causing blood sugar (glucose) levels to be abnormally high.

**Types of Diabetes**

- **Type 1 Diabetes**
  - Insulin Deficiency
  - Globally, type 2 DM is much more prevalent than type 1 DM

- **Type 2 Diabetes**
  - Insulin Resistance

- **Gestational Diabetes**
  - Temporary diabetes during pregnancy

**Obesity**

Obesity is defined as abnormal growth of adipose tissues due to enlargement of fat cells or increase in its number. Obesity causes insulin resistance, which leads to Type 2 DM.

**Assessment of Obesity**

- Skin fold thickness
- Waist-Hip Ratio
- Body weight
  - Ponderal Index
  - Body Mass Index (BMI)
  - Broca’s Index

BMI is currently the most commonly used measure to assess obesity.

**Not so sweet**

India has the second highest number of diabetes patients aged 20-79 years as of 2019.

**Lifestyle Factors That Cause Diabetes**

- Obesity
- Diet
- Stress
- Physical activity
- Urbanization

**Decreased Activity**

- Sedentary Lifestyle
- Physical injury or Morbidity
- Overnutrition
- Eating too much refined foods
- Imbalanced Diet (too much sweets and carbohydrates etc.)

Even though BMI is quite accurate and useful to grade levels of obesity, it does have downsides:

- Doesn’t differentiate between muscle mass and fat
- Doesn’t consider fat distribution

**BMI formula**

\[
BMI = \frac{\text{Weight in KGs}}{(\text{Height in Meters})^2}
\]

**Prevention is key to controlling diabetes.**

Type 2 DM is an iceberg disease, as there are a large number of people who are prediabetic without being aware of it.

- Increase physical activity with moderate exercise
- Avoid sedentary lifestyle
- Eat a balanced and healthy diet
- Avoid processed or “junk” foods
Role of Telemedicine in diabetes management during CoVid - 19 pandemic

Karthick M [1], Guide: Dr. Karthik R. C [2], Dr. Balaji Arumugam [3]


Scope of telemedicine

Telemedicine can facilitate the achievement of individualized treatment goals by:

1) Training patients to manage their own disease;
2) Introducing population-based tools for health care, such as apps;
3) Providing access to electronic decision support tools with oversight from physicians;
4) Delivering timely information and directions based on individual data and population data.

Introduction to telemedicine

Definition: Telemedicine is the use of electronic information to communicate technologies to provide and support healthcare when distance separates the participants.

- "Tele" in Greek - "distance"
- "mederi" in Latin - "to heal"
- "Futuristic" & "experimental"
- Applications - patient care, education, research, administration and public health.

Understanding Telemedicine, Telehealth, Telecare

Telemedicine - the dynamic, real-time, remote interaction of healthcare professionals with individuals seeking health services.

TeleHealth - the passive capture of biometric and health information for self-monitoring and self-managed health and care needs to enable the advancement of health outcomes.

Indian diabetes data

- WHO estimates 72.96 million adults are diabetic
- Prevalence:
  - urban areas - 10.9% - 14.2%
  - rural India - 3.0-7.8%
- Higher in age >50 than compared to <50

Newer initiatives

- Diabetes Tele-Management System [2]
- UIMS² has five components
- Digital health technology in Diabetes management [4]

Diabetes and telemedicine

- Advantages:
  - Improving diabetes patient care,
  - Significant cost benefits
  - Depression treatment, preventive programs
- Disadvantages:
  - Availability,
  - Cost for setup
- Conclusion:
  - Telemedicine well suited for diabetes mainly
  - Its interpretation and predetermination can be easily done by patients at home itself via video
  - Novel 21st-century tool for diabetes health care providers to communicate with patients to improve the quality and lower the costs.

Acknowledgements and references
HEALTH EDUCATION ON DIABETES

THE FACT REMAINS THAT EFFECTIVE HEALTH EDUCATION HAS THE POTENTIAL FOR SAVING MANY MORE LIVES THAN A RESEARCH DISCOVERY

OBJECTIVES AND PRINCIPLES
- To encourage people to adopt healthy life style
- To stimulate individual and community participation
- To arouse their interest, provide knowledge, change attitude towards healthy life

COMMUNICATION FOR HEALTH EDUCATION

SENDER:
- PRIMARY: Doctors and all medical and nursing staffs
- SECONDARY: Celebrities and leaders
- TERTIARY: Social activists, influencers, popular people in social media

QUALITIES OF SENDER:
- They should encourage feedback
- They should be writing an example
- Develop good human relations
- Reinforce the information periodically
- Comprehension – The sender must use the language according to the level of understanding of the audience
- The sender must encourage high level of participation which in turn creates a sense of involvement
- The sender must know the FELT NEEDS and talk accordingly
- Credibility

MESSAGE:
- BREAKING THE MYTHS
  - Encourage regular intake of drugs
  - Emphasis importance of good diet and physical activity
  - Avoid self-prescription
  - Good sleep wake cycle
  - Fact that the microorganisms feed on sugar need for controlled sugar level
  - Encourage youngsters to have controlled intake of junk foods rather than completely stopping or binge eating to prevent early onset

- INTERPERSONAL COMMUNICATION
  - Interpersonal is the best channel communications & is aoractic
  - The doctors plays the major role here
- MASS MEDIA
  - Reaching larger population in a short time but has poor feedback mechanism
- TRADITIONAL OR TALK MEDIA
  - Reaching every community easily along with cultural heritage

- CHANNELS
  - Type of communicaton
    - Promote pictorial representation of myths and facts in all public places
    - Posters conveying the calories in particular foods and the amount of work needed to burn them
    - How many calories does it take to burn off those thanksgiving day calories?
NURSES MAKE THE DIFFERENCE

Theme of World Diabetes Day 2020.
AIM: to raise awareness around the crucial role that NURSES play in supporting people living with diabetes.

- Diagnosing Diabetes early to ensure prompt treatment
- First point of contact for people, referring them to other specialist services
- Providing Self-management training and psychological care for people with diabetes

Educate the people to help prevent the complication

Guide the people in managing the impact of the condition

Support people:
- living with diabetes
- those at risk of developing type 2 diabetes
New Onset Diabetes Mellitus precipitated by COVID-19 Infection

Raghunandan Ramanathan, Pre Final Year, Tagore Medical College & Hospital, Chennai.
Guided by: Dr. Balaji Arumugam, Professor & Head of SPM, Tagore Medical College & Hospital, Chennai.

ABSTRACT:
Diabetes Mellitus have been reported frequently in patients with new Corona Virus Disease 2019. COVID 19. It is associated with progressive course and worst outcome. Recently, case reports and many cross sectional studies describes onset of diabetes and DKA when infected with COVID 19. The incidence of DKA and development of Type 2 DM in previously non-diabetic individuals with multiorgan involvement are seen in patients admitted positive with COVID 19 infection.

INTRODUCTION:
Novel Corona Virus Disease 2019, a 2020 pandemic has resulted in an unexpected loss in lives, quality of life and economy. The COVID 19 spectrum varies from asymptomatic to death & its complication involves various organs like Lungs, Kidney, Liver and Pancreas. The impact of COVID 19 on endocrine gland is still under reported. Previous SARS Outbreak had history of new onset DM. But new onsets of DM is still under reported. During COVID 19 pandemic, Patients with previous history or underlying cardiovascular conditions were at higher risk of developing severe symptoms and poor prognosis. A history of diabetes was associated with 22.5 percentage of COVID 19 cases in one article and mortality rate up to 16% among people with diabetes and without other comorbidities. Recent studies demonstrated that COVID-19 can utilize Angiotensin-Converting Enzyme 2 on the surface of epithelial cells to bind and gain entry to infected cells. Binding of ACE2 by SARS-CoV-2 in covid-19 may play important role in pathogenesis and could predispose to hyperglycemia and development of diabetes mellitus on other hand. Here in we describe a patient who was previously healthy but presented with DKA and new onset of diabetes mellitus complicating covid-19 pneumonia.

CASE PRESENTATION:
34-year-old gentleman, medically free has presented to Emergency Department on 21.08.2020 with fatigue, fever, decrease in activity for 4 days with body ache and Nocturia. He went to Private Health Care Centre where is blood sugar was measured as 12.5 mmol/L. He has respiratory symptoms like breathing difficulties. He has history of fever. There is no diarrhea, abdominal pain, burning sensation on micturition. There was no drug contact history with covid-19 cases and has no family history of diabetes mellitus. He is a non smoker and non alcoholic.

Upon examination in Emergency Room, he was conscious, oriented to time, place and person but looked to be dehydrated. He was afebrile at the time of examination. Pulse rate was 82 beats per minute, Respiratory Rate was fluctuating from 26 to 38 beats per minute and oxygen saturation of 93 percentage on 2 L nasal cannula.

His BMI was 26.3 kg/m² and has no signs of insulin resistance. Lab investigation was significant for hyperglycemia – 12.5 mmol/L. High anion metabolic acidosis – 20, pH 72 and Ketonuria - 4 confirming DKA.

INVESTIGATIONS

<table>
<thead>
<tr>
<th>Sample</th>
<th>Result</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUN</td>
<td>94 mmol/dL</td>
<td>7.9-20.1 mmol/dL</td>
</tr>
<tr>
<td>Creatinine</td>
<td>13.5 mg/dL</td>
<td>0-1.3 mg/dL</td>
</tr>
<tr>
<td>Sodium</td>
<td>127 mmol/dL</td>
<td>136-146 mmol/dL</td>
</tr>
<tr>
<td>Potassium</td>
<td>4.6 mmol/dL</td>
<td>3.5-5.1 mmol/dL</td>
</tr>
<tr>
<td>Chloride</td>
<td>101 mmol/dL</td>
<td>100-110 mmol/dL</td>
</tr>
<tr>
<td>WBC</td>
<td>9300 cells/µm³</td>
<td>4000-11000 cells/µm³</td>
</tr>
<tr>
<td>Lymphocytes</td>
<td>4%</td>
<td>24-40%</td>
</tr>
<tr>
<td>Platelet</td>
<td>149 k/m³</td>
<td>150-450 k/m³</td>
</tr>
<tr>
<td>Insulin</td>
<td>15 MIU/L</td>
<td>2.5-37.5 MIU/L</td>
</tr>
<tr>
<td>Hba1C</td>
<td>6%</td>
<td>Below 6%</td>
</tr>
<tr>
<td>Chest X-RAY</td>
<td>Bilateral Iffusion</td>
<td></td>
</tr>
<tr>
<td>D-Dimer</td>
<td>4.83 mg/L</td>
<td>&lt;0.15</td>
</tr>
<tr>
<td>LOH</td>
<td>968 U/L</td>
<td>208-378 U/L</td>
</tr>
<tr>
<td>Ferritin</td>
<td>1444.5 ng/ml</td>
<td>24-336 ng/ml</td>
</tr>
<tr>
<td>CRP</td>
<td>14.5 mg/dL</td>
<td>0-6.8 mg/dL</td>
</tr>
</tbody>
</table>

The presentation of patient in this case report is consistent with the hypothesis that COVID 19, not onle causes hyperglycaemia but pre disposes to newly diagnosed T2DM to DKA which can sometimes be resistant to treatment. In conclusion, infection with COVID-19 can lead to uncontrolled hyperglycaemia, development of diabetes mellitus and DKA which can further complicate the course and outcome of COVID-19 infection. It is important to be aware of the possibility of DKA and acute diabetes in patients with COVID-19 who present with non-specific symptoms. Further studies are needed to reveal the exact underlying pathophysiological mechanism of this serious condition.

NURSE AND DIABETES

DIABETES: is a heterogeneous group of diseases, characterised by a state of chronic hyperglycaemia, resulting from a diversity of aetiologies, environmental and genetic, acting jointly.

APPROACH TO DIABETES MANAGEMENT

1. ASSESSMENT
   - SIGNS AND SYMPTOMS:
     i. Increase in thirst
     ii. Frequent urination
     iii. Extreme hunger
     iv. Unexplainable weight loss
     v. Fatigue and irritability
     vi. Slow healing wounds
     vii. Frequent infection
     viii. Blurred vision

2. DIAGNOSIS:
   - BLOOD MONITORING:
     Diabetes –
     Fasting plasma glucose \( \geq 7.0\text{mmol/l (126mg/dl)} \)
     2-h plasma glucose \( \geq 11.1\text{mmol/l (200mg/dl)} \)

   Venous plasma glucose 2-h after ingestion of 75g oral glucose load.

3. PLANNING:
   - ORAL THERAPY:
     - Most common drugs used:
       a. Metformin
       b. Glitazones
       c. Gliptins
   - INJECTION THERAPY:
     a. Insulin injection
     b. Insulin infusion
   - TOTAL DAILY INSULIN: Weight (pounds) / 4

4. IMPLEMENTATION:
   - Advice on avoiding the sedentary lifestyle
   - Motivate patients to exercise for 30 mins each day
   - Advice patients to go for low carb, low calorie, high fibre and low fat diet
   - Educate patients to examine their feet for any wounds
   - Instruct patients to wear protective footwear
   - Avoid alcohol intake and smoking
   - Motivate patients for regular blood glucose evaluation, HBA1C levels and eye examinations
   - Education on home glucose monitoring and self-administering of insulin

5. FOLLOW UP:
   - Blood monitoring:
     - Fasting blood glucose
     - 2-h post prandial blood glucose
     - Random blood glucose
   - Urine monitoring:
     - Glucose
     - Ketones
     - Microalbuminuria

REFERENCE:
- PARK TEXTBOOK OF PREVENTIVE AND SOCIAL MEDICINE (edition 25)
  https://www.ncbi.nlm.nih.gov/books/NBK279017

PSYCHOLOGICAL FACTORS IN DIABETES

- Emotional Distress in Diabetes (Psychological Reaction in Patients)
  - Poor Glycaemic Control
  - Self-Care Behaviour and treatment adherence
  - Reduced Quality of Life (QOL)
  - Increased Diabetes-related Complications

- Psychological factors in patients with diabetes:
  - Stress
  - Anxiety
  - Depression
  - Eating disorder
  - Substance use
EXERCISE AND DIABETES

DIABETES MELLITUS: Diabetes mellitus is a clinical syndrome characterized by an increase in plasma blood glucose (hyperglycaemia).

<table>
<thead>
<tr>
<th>Type 1 DM</th>
<th>Type 2 DM</th>
<th>Gestational Diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1 diabetes is generally considered a T cell mediated autoimmune disease involving destruction of the insulin-secreting beta cells in the pancreatic islets.</td>
<td>Type 2 diabetes, initially insulin resistance leads to hyperinsulinemia in order to maintain normal blood glucose levels and slowly progresses to insulin deficiency.</td>
<td>Gestational diabetes is defined as diabetes with first onset or recognition during pregnancy.</td>
</tr>
</tbody>
</table>

"Physical activity includes all movements that increases energy use, whereas exercise is planned, structured physical activity."

BENEFITS OF EXERCISE AND PHYSICAL ACTIVITY

AEROBIC EXERCISE: Aerobic training increases mitochondrial density, insulin sensitivity, oxidative enzymes, complementarity and reactivity of blood vessels, lung function, immune function, cardiac output and reduces AI*, triglycerides, blood pressure, and insulin resistance.

RESISTANCE EXERCISE: Resistance exercise can assist in minimizing risk of exercise-induced hypoglycaemia in type 1 diabetes. In type 2 diabetes it improves glycemic control, insulin resistance, fat mass, blood pressure, strength, and lean body mass.

OTHER ACTIVITIES:
- Stretching increases range of motion around joints and flexibility but does not affect glycemic control.
- Balance training improves balance and gait, even when peripheral neuropathy is present.
- Yoga and tai chi may promote improvement in glycemic control, lipid levels, and body composition in adults with type 2 diabetes.

RECOMMENDATIONS FOR REDUCED SEDENTARY TIME

Prolonged sitting interrupted by brief (5min) bouts of standing or light-intensity ambulation every 20–30 min improves glycemic control in sedentary obese populations and in women with impaired glucose regulation.

In adults with type 2 diabetes, interrupting prolonged sitting with 15 min of post meal walking and with 3 min of light walking and simple body-weight resistance activities every 30 min improves glycemic control.

PHYSICAL ACTIVITY & TYPE 2 DIABETES

- Daily exercise, or at least not allowing more than 2 days to elapse between exercise sessions, is recommended to enhance insulin action.
- Adults with type 2 diabetes should ideally perform both aerobic and resistance exercise training for optimal glycemic and health outcomes.
- Children and adolescents with type 2 diabetes should be encouraged to meet the same physical activity goals set for youth in general (a minimum of 60 min/day of moderate-to-vigorous physical activity, including strength-related exercise at least 3 days/week).
- Structured lifestyle interventions that include at least 150 min/week of physical activity and dietary changes resulting in weight loss of 5%–7% are recommended to prevent or delay the onset of type 2 diabetes in populations at high risk and with prediabetes.

PHYSICAL ACTIVITY & TYPE 1 DIABETES

- Youth and adults with type 1 diabetes can benefit from being physically active, and activity should be recommended to all (Mixed activities such as interval training or team/individual field sports are associated with better glucose stability than those that are predominantly aerobic).
- Blood glucose responses to physical activity in all people with type 1 diabetes are highly variable based on activity type/timing and require different adjustments.
- Frequent blood glucose checks are required to implement carbohydrate intake and insulin dose adjustment strategies to maintain glycemic balance during and after physical activity.
- Insulin users can exercise using either basal-bolus injection regimens or insulin pumps. Continuous glucose monitoring during physical activity can be used to detect hypoglycaemia.

PREGNANCY WITH DIABETES

- Women with pre-existing diabetes of any type should be advised to engage in regular physical activity prior to and during pregnancy.
- Pregnant women with or at risk for gestational diabetes mellitus should be advised to engage in 20–220 min of moderate-intensity exercise on most or all days of the week.

Table 2: Baseline initial pre-exercise meal insulin bolus reduction for activity within 50 min after insulin administration

<table>
<thead>
<tr>
<th>Exercise duration</th>
<th>Exercise intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 min</td>
<td>30 min</td>
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<tr>
<td>45 min</td>
<td>30 min</td>
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<tr>
<td>60 min</td>
<td>30 min</td>
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<tr>
<td>90 min</td>
<td>30 min</td>
</tr>
<tr>
<td>120 min</td>
<td>30 min</td>
</tr>
</tbody>
</table>

Table 3: Exercise considerations for diabetes, hypertension, and cholesterol medications and recommended safety and dose adjustments

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</tr>
<tr>
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<td>30 min</td>
</tr>
</tbody>
</table>

Management of Food and Insulin With Physical Activity

- To prevent hypoglycaemia during prolonged exercise, additional carbohydrate intake and/or reductions in insulin are required.
- Glucose concentrations should always be checked prior to exercise undertaken by individuals with type 1 diabetes. The target range for blood glucose prior to exercise should ideally be between 90 and 200 mg/dL. Carbohydrate intake required will vary with insulin regimens, exercise timing, type of activity, pre-workout blood glucose levels.

REFERENCE: Physical Activity/Exercise and Diabetes: A Position Statement of the American Diabetes Association

By Viknesh Ram B S, Sudharsanam V
DIABETES IN COVID: CAUSE? EFFECT?

**DIABETES AS A CAUSE???

- Diabetes Mellitus (DM) – risk factor but pathogenesis yet to be confirmed
- Possibly attributed to binding of ACE2 & SARS-CoV
- WHY IS MORBIDITY↑? 
- DM patients: increased release of pro-inflammatory cytokines like TNF-alpha, interferon (reduced viral clearance)
- Virus binds to ACE2 receptors decreases insulin secretion and glucose utilization in organs
- Formation of ketoacids bodies resulting in DKA

**DIABETES AS AN EFFECT?

- First reported in a 18 yr old German Mr Gnad, with classical diabetic symptoms post recovery
- Unanswered Questions:
  - Type 1 or 2; The frequency of occurrence, who is more vulnerable and the natural history
- COVIDIAB: Group Of Researchers involved

**EFFECT OF HYPOGLYCEMIC DRUGS

- ACE Inhibitors & SGLT2 inhibitors: 
  - ACE2 expresses so viral load
- DPP4: Anti-inflammatory effects

1. ACE2 & Diabetes: ACE of ACEs by Daniel Battle et al
2. Angiotensin 2 & endocrine pancreas by Carlson et al
3. Diabetes & COVID 19 evidence, current status by Ritesh Gupta et al
4. New onset DM in COVID 19 by Francesco Rubino et al
PRECAUTIONS TO BE TAKEN IN BREASTFEEDING MOTHERS WITH HISTORY OF GESTATIONAL DIABETES MELITUS DURING COVID 19

By Divya Gera
ACS Medical College
WORLD DIABETES DAY
14 November

PROTECT YOUR FAMILY

DIABETES:
NURSES MAKE THE DIFFERENCE

Have a look at our materials available for use in awareness activities!

Find out more:
https://worlddiabetesday.org/resources
#NursesMakeTheDifference

59% of health professionals are nurses

WOMEN AND DIABETES:
OUR RIGHT TO A HEALTHY FUTURE

OVER ONE THIRD OF PEOPLE WITH DIABETES WILL DEVELOP VISION LOSS

EYES ON DIABETES
6 NIVETHA

7 PAVITHRA
COVID-19 AND DIABETES

10 THANSHIKA
ESSAY WRITING PARTICIPANTS:

TOPIC:  **LOCKDOWN AND DIABETES**

<table>
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<tr>
<th>S NO</th>
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<td>8</td>
<td>RENITA JACOB</td>
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<td>9</td>
<td>POOJA B</td>
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<td>16</td>
<td>CHARULATHA</td>
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</tbody>
</table>
PRIZE WINNERS:

E POSTER:

CATEGORY 1: NIVEDHANA.P – PREFINAL TAGORE MEDICAL COLLEGE
CATEGORY 2: M. VIKAS KUMAR REDDY – PREFINAL - TAGORE MEDICAL COLLEGE
CATEGORY 3: R.RAGUNANDAN – PREFINAL - TAGORE MEDICAL COLLEGE
CATEGORY 4: DR.KAVITHA.V – PG- TAGORE MEDICAL COLLEGE
SPECIAL APPRECIATION: DR.A.KEERThana – PG- SATHYA SAI MEDICAL COLLEGE

ESSAY WRITING:

1ST PRIZE: RENITA JACOB – PREFINAL- TAGORE MEDICAL COLLEGE
1ST PRIZE: NIVEDHANA.P – PREFINAL – TAGORE MEDICAL COLLEGE
2ND PRIZE :CHARULATHA.G – PREFINAL – TAGORE MEDICAL COLLEGE
2ND PRIZE:DEEPAK NIKHIL.N – 2ND YEAR – ACS MEDICAL COLLEGE
3RD PRIZE: M.SAEDA- PREFINAL- VELLAMAL MEDICAL COLLEGE
SPECIAL APPRECIATION: DR.AMRITA TERESA- INTERN- TAGORE MEDICAL COLLEGE

PHOTO COLLAGE:

1ST PRIZE: DIVYA GERA- 2ND YEAR- ACS MEDICAL COLLEGE
2ND PRIZE: M.SUBITHSHA –FINAL YEAR- TAGORE MEDICAL COLLEGE
3RD PRIZE: PAVITHRA.R – PREFINAL- TAGORE MEDICAL COLLEGE
3RD PRIZE: RAJALAKSHMI.H – PREFINAL – TAGORE MEDICAL COLLEGE
In UHTC, on the occasion of World Diabetes Day, an awareness program was conducted where 20 diabetics and general public took part in multiple activities like diabetic blue circle walk, diabetic exercise on 17/11/2020. The program concluded with the taking of the diabetic pledge.
Health education about diabetes was given on 12/11/2020 for World Diabetes Day 2020 at the RHTC. About 50 people attended the awareness program with proper social distancing etiquettes and got benefitted.