



# Diabetes Care for All: An Anchor in Prevention of Cardiovascular Disease and Death

Dr Aghanya Chukwunonso *M.B.B.S, MACE, FWACP*

Consultant Physician/Endocrinologist

8th Abuja Cardiovascular Symposium 2024



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# At the end of this interaction, participants should be able to:



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Reversing Medical Tourism

1. Define and diagnose Diabetes
2. Classify Diabetes
3. Understand the Risk factors and Clinical Features
4. Investigate People with Diabetes
5. Identify Complications
6. Treat Diabetes (*including special situations*)
7. Follow Up People with Diabetes
8. Know when to refer

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# Case 1



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- A 42yr old newly employed office executive
- While undergoing routine office medical check up
- Found to have a fasting plasma glucose of 9.0mmol/l and
- A blood pressure of 110/80mmhg,
- No other presenting symptoms
- Otherwise, stable.

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## Is the Patient Diabetic?

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***Founded since 1982 to Support and Serve***

# Case 1: Poll

2. How will you make a diagnosis of diabetes in the patient?

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## How will you make a diagnosis of Diabetes in the patient?

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# Introduction

- Cardiac catheterization procedures in the dedicated catheterization laboratory (cathlab) are apparently at an infantile stage in Nigeria.
- The cardiac cathlab is invaluable in the practice of Cardiology as its use is the **gold standard** for diagnosis and treatment of many cardiovascular conditions.
- In Northern Nigeria, **two prior indigenous cathlab installations had been reported**, one public and one private which had become non-functional.
- However, since 2015 there has reportedly been **no functional indigenous cardiac cathlab in the entire Northern Nigeria**.

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**Is there any additional history you would want to get from the patient?**

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# 1. What is Diabetes?

# Who is Cardiocare Multispecialty Hospital?



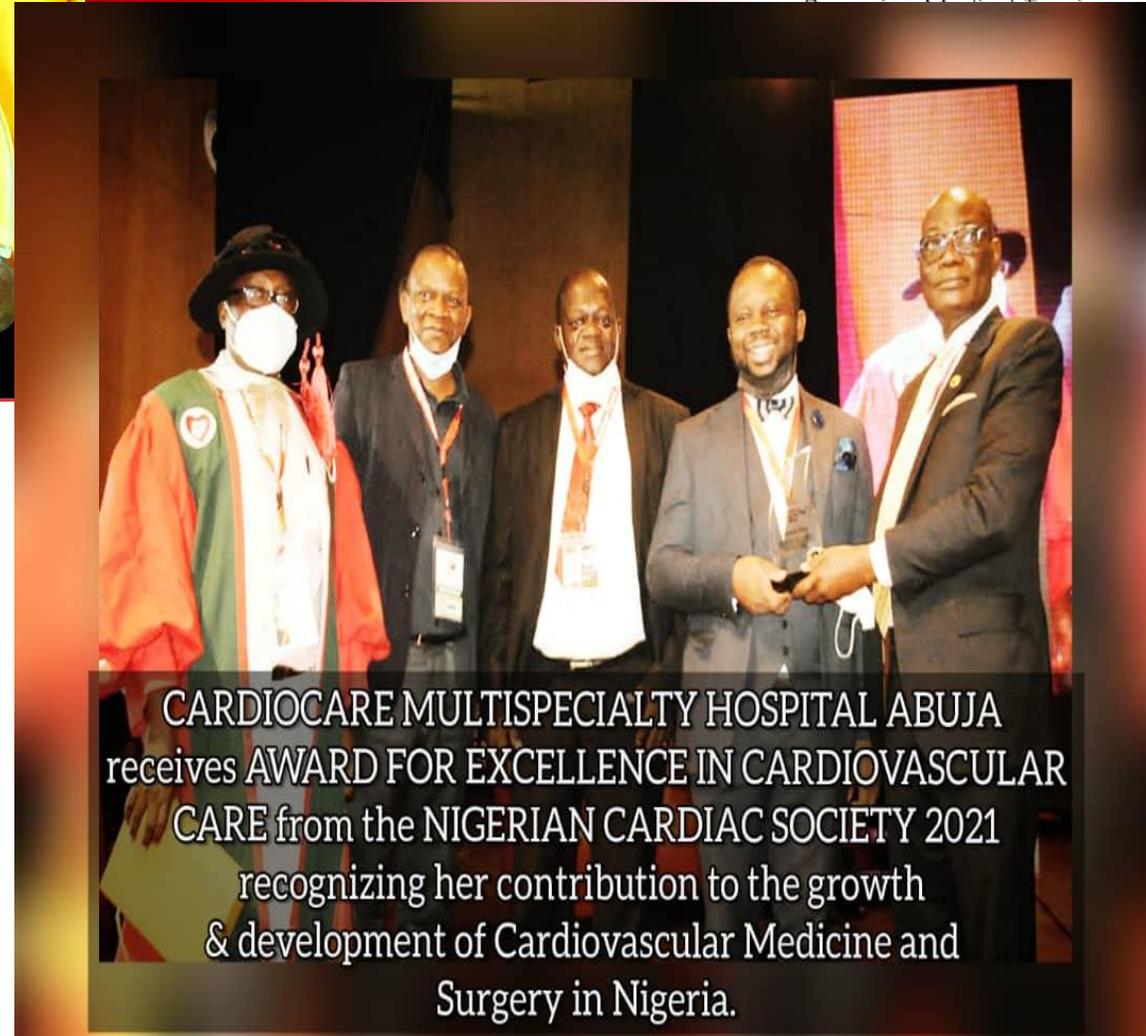
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Northern Nigeria's **pioneer standalone Institution** wholly dedicated to comprehensive **Cardiovascular and Internal Medicine**.

Received Multiple **Awards for Excellence in Service**.

We are a **Support Hospital** for your practice in Nigeria through our **specialized services, training, and research in collaboration with**



CARDIOCARE MULTISPECIALTY HOSPITAL ABUJA receives AWARD FOR EXCELLENCE IN CARDIOVASCULAR CARE from the NIGERIAN CARDIAC SOCIETY 2021 recognizing her contribution to the growth & development of Cardiovascular Medicine and Surgery in Nigeria.

# 1.1 Defining Diabetes

1. Heterogeneous endocrine/metabolic disorder
2. Affecting mainly carbohydrate, fat and protein
3. Characterized by hyperglycemia
4. Due to relative or absolute insulin deficiency
5. Associated with long-term complications



# 1.2 Epidemiology

- Diabetes is **found in every population in the world and in all regions**, including rural parts of low- and middle-income countries
- The number of people with diabetes is steadily rising, with WHO estimating there were **422 million adults with diabetes worldwide in 2014**
- The age-adjusted prevalence in adults **rose from 4.7% in 1980 to 8.5% in 2014**
  - **the greatest rise in low- and middle-income countries compared to high-income countries**

# Abuja Cardiovascular Symposia- Five (8) so far.



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Reversing Medical Tourism

- Over 750 participants from over 30 states
- Trained in **PRIMARY CARDIOVASCULAR SKILLS-** mainly
  - ECG interpretation,
  - Basic Management of Diabetes, Hypertension, Acute coronary syndromes, etc
  - Basic Life Support
- **10 CME points & Certificate**



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# 1.3 Epidemiology

- In addition, the International Diabetes Federation (IDF) estimates that **1.1 million children and adolescents aged 14–19 years have T1DM**
- Without interventions to halt the increase in diabetes, there will be at least **629 million people living with diabetes by 2045**
- High blood glucose causes almost **4 million deaths each year,**
- The IDF estimates that the annual global health care spending on diabetes among adults was **US\$ 850 billion in 2017**



## 2. How does Diabetes Result?

# National Interventional Cardiology Symposium- One (1)



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- 41 attendees from:
  - Lagos=3, Benin=1, Kano=3, Katsina=3, Sokoto=5
  - Enugu=3, Gombe= 5, Jos=5, Kebbi=4, FCT= 8



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# 2.1 WHO Classification of Diabetes Mellitus 2019



1. Type 1

2. Type 2

3. Hyperglycemia first detected in Pregnancy

4. Hybrid forms

5. Other Specific Types

6. Unclassified

Type 1 diabetes
Type 2 diabetes
Hybrid forms of diabetes
Slowly evolving immune-mediated diabetes of adults
Ketosis prone type 2 diabetes
Other specific types (see Tables)
Monogenic diabetes
- Monogenic defects of $\beta$ -cell function
- Monogenic defects in insulin action
Diseases of the exocrine pancreas
Endocrine disorders
Drug- or chemical-induced
Infections
Uncommon specific forms of immune-mediated diabetes
Other genetic syndromes sometimes associated with diabetes
Unclassified diabetes
This category should be used temporarily when there is not a clear diagnostic category especially close to the time of diagnosis of diabetes
Hyperglycemia first detected during pregnancy
Diabetes mellitus in pregnancy
Gestational diabetes mellitus

## 2.2 Pathogenesis-Type 1



- **HLA-associated, immune-mediated 1A)**
- **Autoimmunity:** occurs early in life e.g. anti-GAD, AIA, anti-Islet cell antibody
- **Environmental factors:** congenital rubella, CMV, bovine milk etc.

## 2.3 Pathogenesis-Type 2



- **Genetic predetermination:**
  - ~50% concordance rate
- **Environmental factors:**
  - Early: Low birth weight
  - Late: Obesity, sedentary, ageing
- **Pre-diabetes:**
  - Insulin resistance and  $\beta$ -cells failure



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Fixing Heart Diseases without Open Surgery while awake.

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# 2.4 Risk Factors for Developing Type 2 Diabetes



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- Family history of diabetes (i.e., parent or sibling with type 2 diabetes)
- Obesity (BMI  $\geq 30$  kg/m<sup>2</sup>)
- Habitual physical inactivity
- Race/ethnicity
  - (e.g., African American, Hispanic American, Native American, etc)
- Previously identified IFG or IGT
- History of GDM or delivery of baby  $\geq 4$  kg
- Hypertension (blood pressure  $\geq 140/90$  mmHg)
- HDL cholesterol level  $<35$  mg/dL and/or a triglyceride level  $>250$  mg/dL
- Polycystic ovary syndrome or acanthosis nigricans

# Case 2



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- A 38yr old woman who presented in the ER
  - history of weight loss, polydypsia, polyuria,
  - generalized body weakness with blurring of vision and
  - painful sensations on both feet.
  - There is a positive family hx of diabetes in both parents of which the father died of diabetic complications.
- RBS on presentation was 26.9mmol/l
- Blood pressure 160/100mmHg

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## Case 2 - Is the Patient Diabetic?

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**What type of diabetes is she more likely to have?**

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# Coronary Angiography & Percutaneous Coronary Intervention

For Heart Attacks/Myocardial Infarction, Angina, Ischemic Heart Disease/Failure-  
Stents, Balloon Angioplasty, & Chronic Total Occlusions (CTO) of Heart Vessels

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# What other investigations are important in the management of this patient?

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## What is your target BP?

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## What other possible complications can she have?

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# 3. How do we make a diagnosis of Diabetes?



# 3.1 How to make diagnosis

## Criteria (WHO, 1999)



### 1. SYMPTOMATIC:

Single FPG  $\geq 126$ mg/dl (7mmol/L);  
OR

Single RBS/2HPG/OGTT  $\geq 200$ mg/dl  
(11.1mmol/L)

### ASYMPTOMATIC:

At least two (2) occasions with  
FPG  $\geq 126$ mg/dl (7mmol/L);

At least two (2) occasions with  
RBS/2HPG/OGTT  $\geq 200$ mg/dl  
(11.1mmol/L)

### OTHERS:

#### IMPAIRED GLUCOSE TOLERANCE (IGT):

FPG  $< 7$ mmol/L, 2-hr post-glucose  
7.8-11.1 mmol/L

#### IMPAIRED FASTING GLUCOSE (IFG):

FPG 6.1-6.9, 2-hr post-glucose  $< 7.8$

C-peptides, auto antibodies



# 4. How do we Evaluate a Patient with Diabetes?

# What are the Cardiocare Multispecialty Hospital's

## services?

We provide **24/7 world-class healthcare solutions** for patients, hospitals, and their doctors in:

- ✓ **Interventional Cardiology (Cathlab)**
- ✓ **Endocrinology, Diabetology & Metabolic Medicine**
- ✓ **Cardiology**
- ✓ **Nephrology, Transplant & Dialysis**
- ✓ **Neurology**
- ✓ **Rheumatology**
- ✓ **Pulmonology**
- ✓ **Critical Care**
- ✓ **Cardiothoracic Surgery**
- ✓ **General Internal Medicine**
- ✓ **Comprehensive Medical Checkups**



# 4.1 Clinical Presentations of Diabetes



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1. **Asymptomatic**
2. **Classical symptoms:** polyuria, polydipsia and weight-loss
  - Type 1 Lean; Type 2 Overweight
  - Short Onset: in type 1; Insidious Onset type 2
3. **Acute Complications**
4. **Chronic Complications**
5. **Other Diseases-** e.g. with other autoimmune diseases in type 1
6. Different combinations of the above.

# 4.2 Clinical History



- Classical Symptoms?
- Family History?
- Pregnancy and Delivery History?
- Co-morbidities
- Abnormal Test results
- Lifestyle- smoking, alcohol, etc
- Diet and Nutrition
- Drug History- steroids

# How to refer patients to Consider Cardiocare

## Multispecialty Hospital?

1. Give a standard referral letter & preferably attach any available results
2. **Call:** 0908-331-7777, 0817 444 0888
3. **WhatsApp:** 0908-331-7777
4. **Email:** [frontdesk@cardiocare.ng](mailto:frontdesk@cardiocare.ng)
5. **Visit:** 5, Giza Close Area 11, Garki (off Dunukofia Street- near FCDA) Abuja-FCT.
6. Kindly indicate Doctor's name, & email/phone number especially if you wish to receive a medical report afterwards.



# 4.3 Standard Diabetic Exam



**1.HEAD-** dehydration, air hunger, oral thrush, consciousness, CN palsies



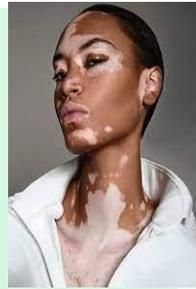
**EYES-** Visual Acuity, Cataracts, Fundoscopy, Xanthelasma



**NECK-** Thyroid, Carotid Pulses, Acanthosis Nigricans



**AXILLA-** Acanthosis Nigricans, Lymph nodes



**SKIN-** Vitiligo, Pigmentation, Dehydration, Diabetic thick skin



**UPPER LIMBS-** Blood pressure, Pulses, Small Muscle wasting



**LOWER LIMBS-** Hair loss, Sensory abnormalities, Muscle wasting, Pulses, Joint Position Sense



**FEET-** Ulcers, Calluses, Lost Pulses, Ischemic, Fungal nails & clefts, Pin Prick, Vibration Sense, Light Touch

# 4.3 Standard Diabetic Examination

1. **HEAD-** dehydration, air hunger, oral thrush, consciousness, CN palsies
2. **EYES-** Visual Acuity, Cataracts, Fundoscopy, Xanthelasma
3. **NECK-** Thyroid, Carotid Pulses, Acanthosis Nigricans
4. **AXILLA-** Acanthosis Nigricans
5. **SKIN-** Vitiligo, Pigmentation, Dehydration, Diabetic thick skin
6. **UPPER LIMBS-** Blood pressure, Pulses, Small Muscle wasting
7. **LOWER LIMBS-** Hair loss, Sensory abnormalities, Muscle wasting, Pulses, Joint Position Sense
8. **FEET-** Ulcers, Calluses, Lost Pulses, Ischemic, Fungal Infections- nails, clefts, Pin Prick, Vibration Sense, Light Touch

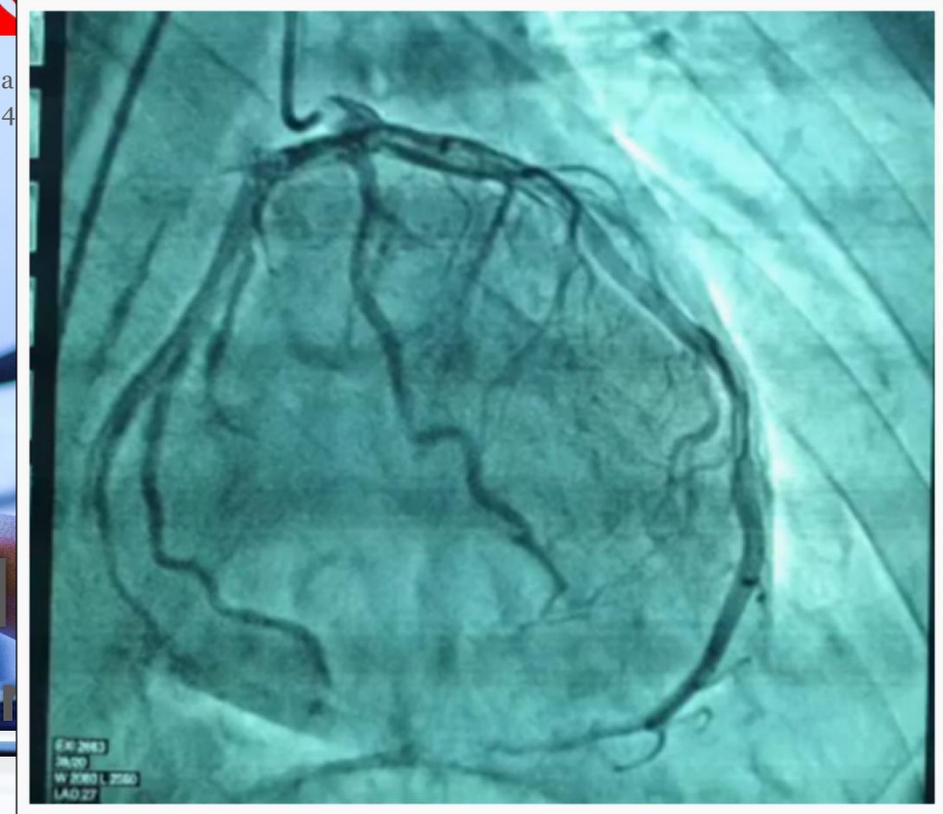


# 4.4 Basic Investigations



- Lipid profile
- Glycosylated Hemoglobin (HbA1c)
- Electrolytes, Urea & creatinine
- Urinalysis
- ECG
- Microalbuminuria
- Uric Acid

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For Heart Attacks/Myocardial Infarction, Angina, Ischemic Heart Disease/Failure-  
Stents, Balloon Angioplasty, & Chronic Total Occlusions (CTO) of Heart Vessels

# NOTICE!!!



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It is an **ABOMINATION** to review a diabetic patient and treat only his sugar without:

- a. checking his foot; &
- b. looking out for complications; &
- c. educating the patient



# 5. Diabetic Complications to look out for?



# 5.1 Diabetic Complications to look out for



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Can be classified broadly into three:

- I. Acute/metabolic Complications
- II. Chronic Complications
- III. Other Complications

# Our Experience- Coronary

- The predominant procedures
  - 233 (51.3%) diagnostic coronary
  - 90 (19.8%) percutaneous interv



# 5.2 Acute Complications



## **a. Metabolic**

- Diabetic ketoacidosis
- Hyperosmolar hyperglycemic state
- Lactic acidosis
- Iatrogenic hypoglycaemia

## **b. Infections**

- usually bacterial e.g. UTI, acute chest infections, abscess, sepsis, malignant otitis externa, mucormycosis

# 5.3 Chronic Complications: Vascular



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## ○ Microvascular:

- Retinopathy
- Nephropathy
- Neuropathy

## ○ Macrovascular:

- Stroke
- Peripheral vascular disease
- Coronary artery disease
- Cardiomyopathy



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# 5.4 Other Complications



## ■ Skin

- a) non-infectious: diabetic dermopathy, necrobiosis lipoidica diabetorum
- b) infectious e.g. candidiasis
- c) mixed: diabetic foot syndrome

## ■ Eye:

- cataract, glaucoma, diabetic ophthalmoplegia

## ■ Bones and joints:

- Dupuytren's contracture, diabetic cheiroarthropathy, Charcot's joint

## ■ Pregnancy-related:

- a) maternal: recurrent abortions, polyhydramnios, infertility
- b) fetal: macrosomia, congenital malformations, hypoglycaemia



# Peripheral Arterial Disease and Intervention



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For Peripheral Arterial Disease - to reduce tissue loss and gangrene especially lower limb

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# 6. Treatment Principles and Targets

# Case 4- Dark Toes

- A 60yr old businessman, a known diabetic for the past 15yrs not compliant with medications presented to the clinic following change in color of his big toe
  - RBS of 13mmol/l
  - there is associated calf pain while walking,
  - blurring of vision and burning sensations on the feet.
- On examination, dark coloration of the right big toe
- Investigations done showed
  - Normal EUCR and urinalysis showed 2++ of protein
  - Deranged Fasting Lipid Profile



# Case 4- Dark Toes

- What is the aim/principles of the management of this patient
- Which of the complications do you think the patient has
- What other investigations would you request for in the management of this patient
- Any intervention in the management of the foot

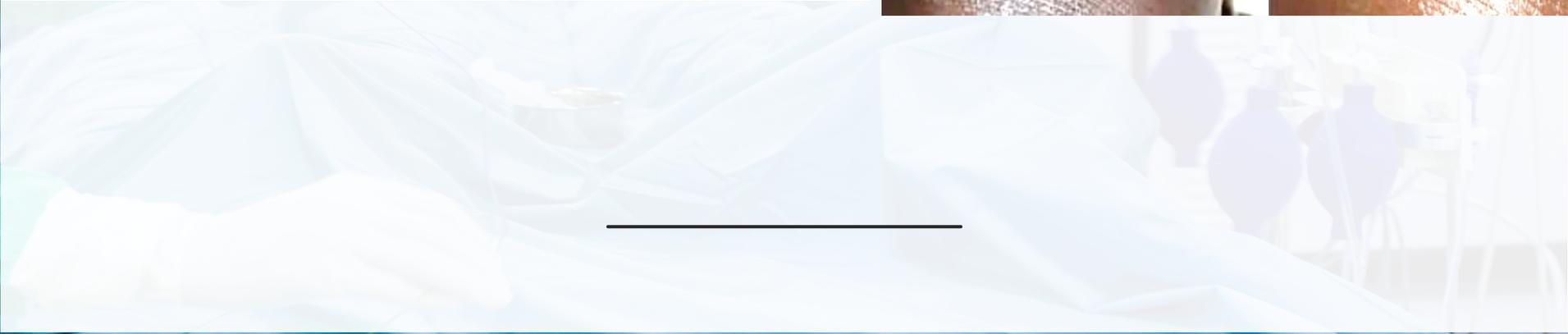
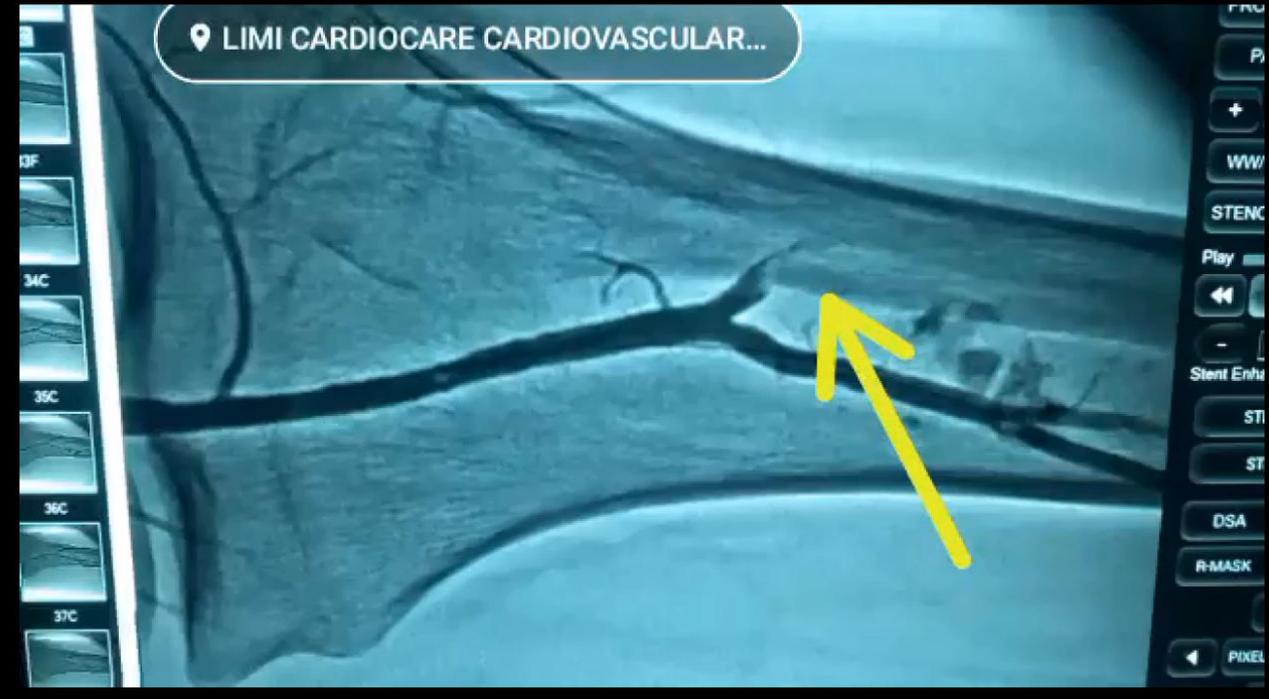
# Case 5- Miracle or Something Else??



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- A known **diabetic for the past 20yrs**
- who has not been regular with his medications,
- he said **he only takes medications when he notices excess urination** and tingling sensations on the feet,
- in recent times he has had about **three episodes of hypoglycemia** in the past two weeks which made the patient stop his drugs and
- the blood glucose has since then been **under control without medications**,
- the patient attributed the improvement to the church revival he attended 2months ago.
- **What do you think is happening here???**



# 6.1 Treatment Goals



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- 1. Prevent, delay and/or minimize complications**
- 2. Reduce morbidity and mortality**
3. To alleviate symptoms
4. Blood glucose control

# 6.2 Comprehensive Targets in the management of Diabetes



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## ■ Blood glucose:

- FPG: <110mg/dl (6.0 mmol/L)
- Postprandial: <200mg/dl (11.1mmol/L)
- HBA1c: <7%

## ■ Lipid profile (No CVD Complications):

- Triglycerides <150mg/dl
- LDL-C: <100mg/dl
- Total cholesterol: < 150mg/dl
- HDL-C: Male- >40mg/dl; Female > 50mg/dl

## ■ Blood Pressure:

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# 7. How to Treat Diabetes



# Cardiac Device Implantation, Programming & Replacement

Pacemakers, Implantable Defibrillators, Cardiac Resynchronization  
Devices



# 7.1 Diabetes Treatment Principles



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**Education &  
Empowerment**

**Lifestyle & Diet  
Modification**

**Pharmacologic  
Therapy**

**Cardiovascular  
Risk  
Modification**

# 7.2 Education



- Main goal is **PATIENT EMPOWERMENT**:
  1. Self-monitoring of blood glucose, blood pressure and weight
  2. Recognizing and Immediate management of hypoglycemia
  3. Foot care and footwear
  4. Adherence and Follow-up
  5. Cooperation with physician in meeting goals
  6. Lifestyle adjustments

# 7.3 Lifestyle & Diet measures for ALL



- **Exercise: program planned with the Physician:**
  - At least 30 minutes 3-5x weekly (if no C/I)
  - Avoid weight bearing or lifting.
    - Examples of recommended exercises include brisk walking, jogging, bicycling, swimming.
- **Dietary measures: individualized, on-going**
  - **Refined sugars:** Drastic reduction
  - **Complex carbohydrate:** 50-60% of total calorie/day
  - **Fiber:** Increase fiber intake
  - **Protein:** 10-20% of total calorie/day
  - **Fats:** Limit intake of saturated fat and dietary cholesterol; should take <30% of total calorie/day
  - **Salt:** moderate – low intake

# 7.4 Glycemic Control



- Depends on an Interplay of 4 factors:
  - 1. Symptoms**
  - 2. Blood Sugar Level**
  - 3. Patient Motivation**
  - 4. Co-morbidities**

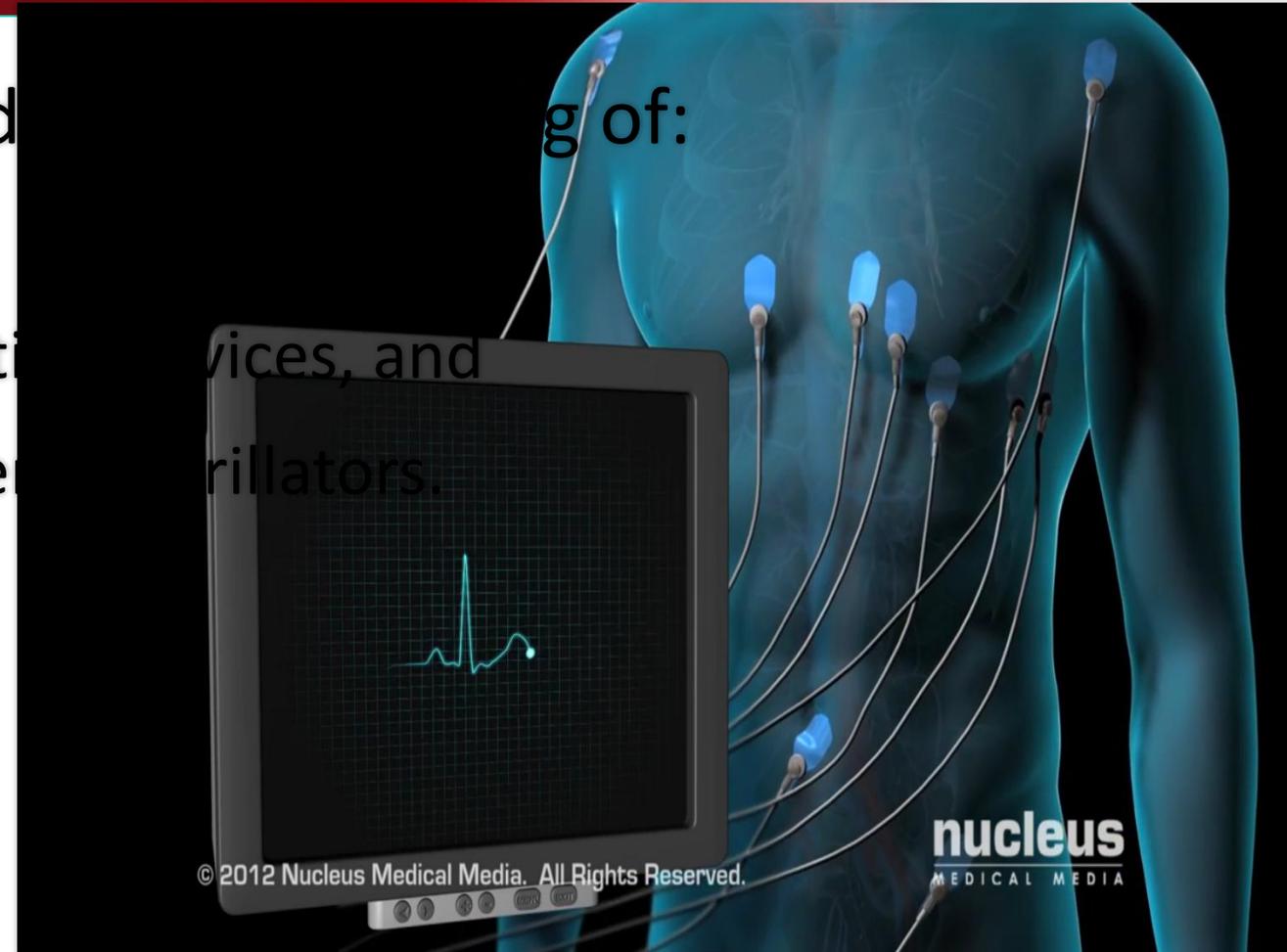
# Our Experience- Cardiac Devices



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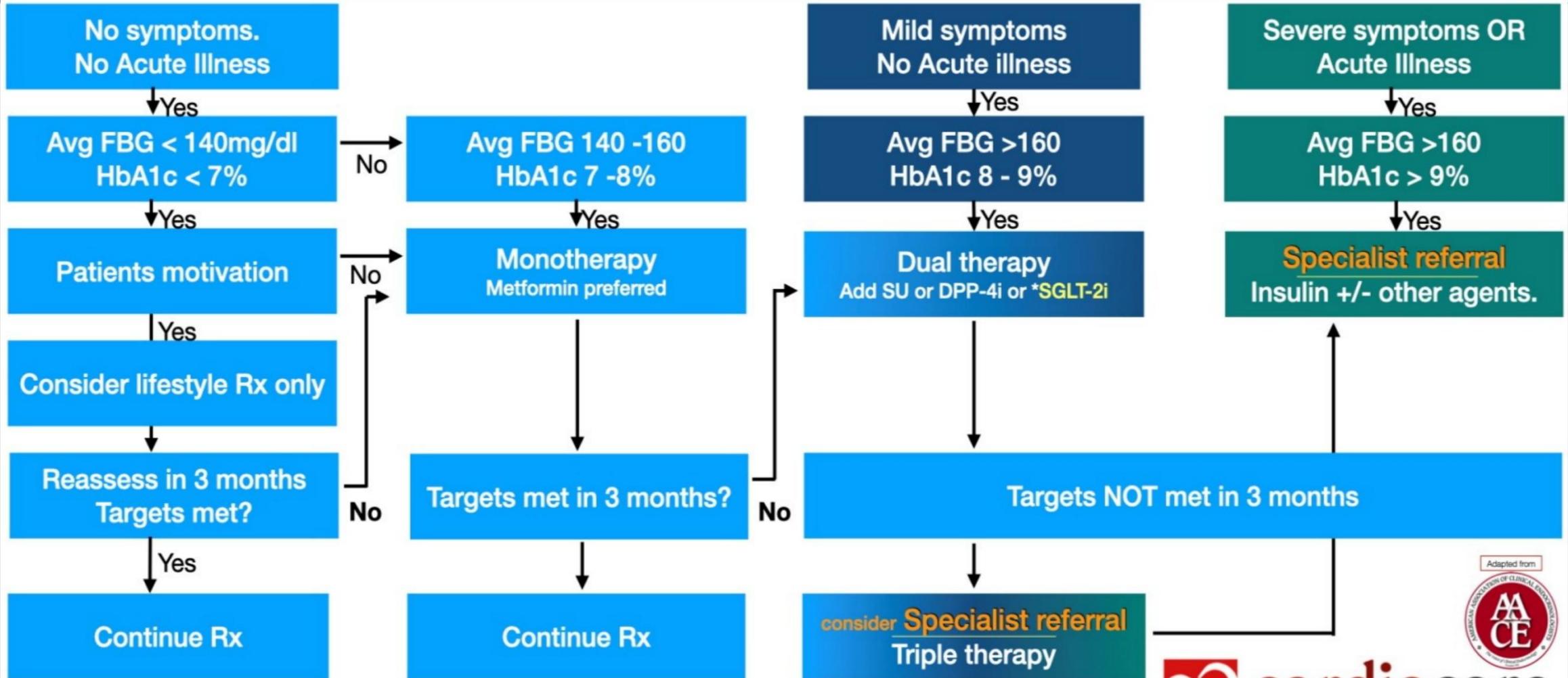
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- 43 (9.5%) permanent cardiac devices
  - 20 (4.4%) Pacemakers,
  - 14 (3.1%) Cardiac resynchronization devices, and
  - 9 (2.0%) implantable cardioverter defibrillators.



# Glycemic control algorithm

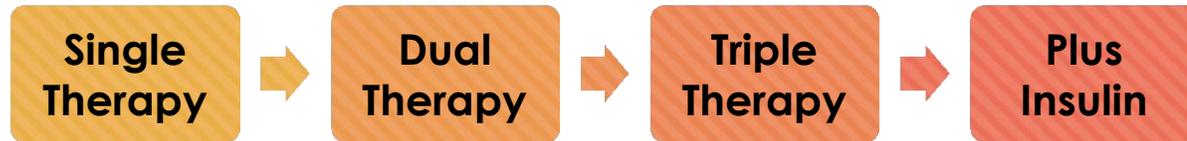
Encourage diet and lifestyle changes in all groups.



start doses small and titrate upwards

\* SGLT-2i preferred in patients with established (of high-risk) ASCVD, HFREF, Diabetic nephropathy.

# Escalating Treatment



1. Always start with Metformin except when contraindicated eg ESRD

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2. Add Glimepiride not exceeding 2mg (OR DPP4-I)

[NOT Daonil]

3. Add DPP4-I (or Glimepiride not exceeding 2mg)

4. Add Dapaglifloxin or Empaglifloxin (SPECIALIST)

5. Add long-acting insulin plus previous but not exceeding 2mg of Glimeperide (SPECIALIST)

6. Refer to a specialist (SPECIALIST)

# Escalating Treatment



## LIFESTYLE & DIET

**1. Always start with Metformin except when contraindicated eg ESRD**

**2a. Add Glimepiride NOT exceeding 2mg  
(NOT Daonil)**

**2b. DPP4-I**

**3a. Add DPP4-I**

**3b. PLUS DPP4-I**

**4. Add Dapagliflozin or Empagliflozin  
(SPECIALIST)**

**5. Add long-acting insulin not exceeding  
2mg of Glimepiride (SPECIALIST)**

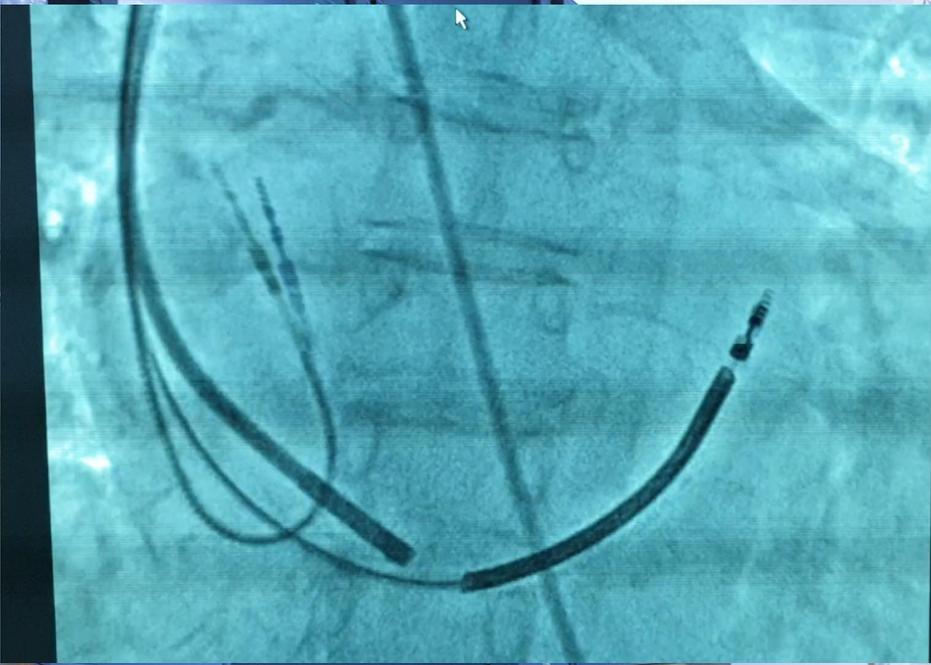
**6. Refer to a specialist (SPECIALIST)**



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# Programming &



Brillators, Cardiac Resynchronization

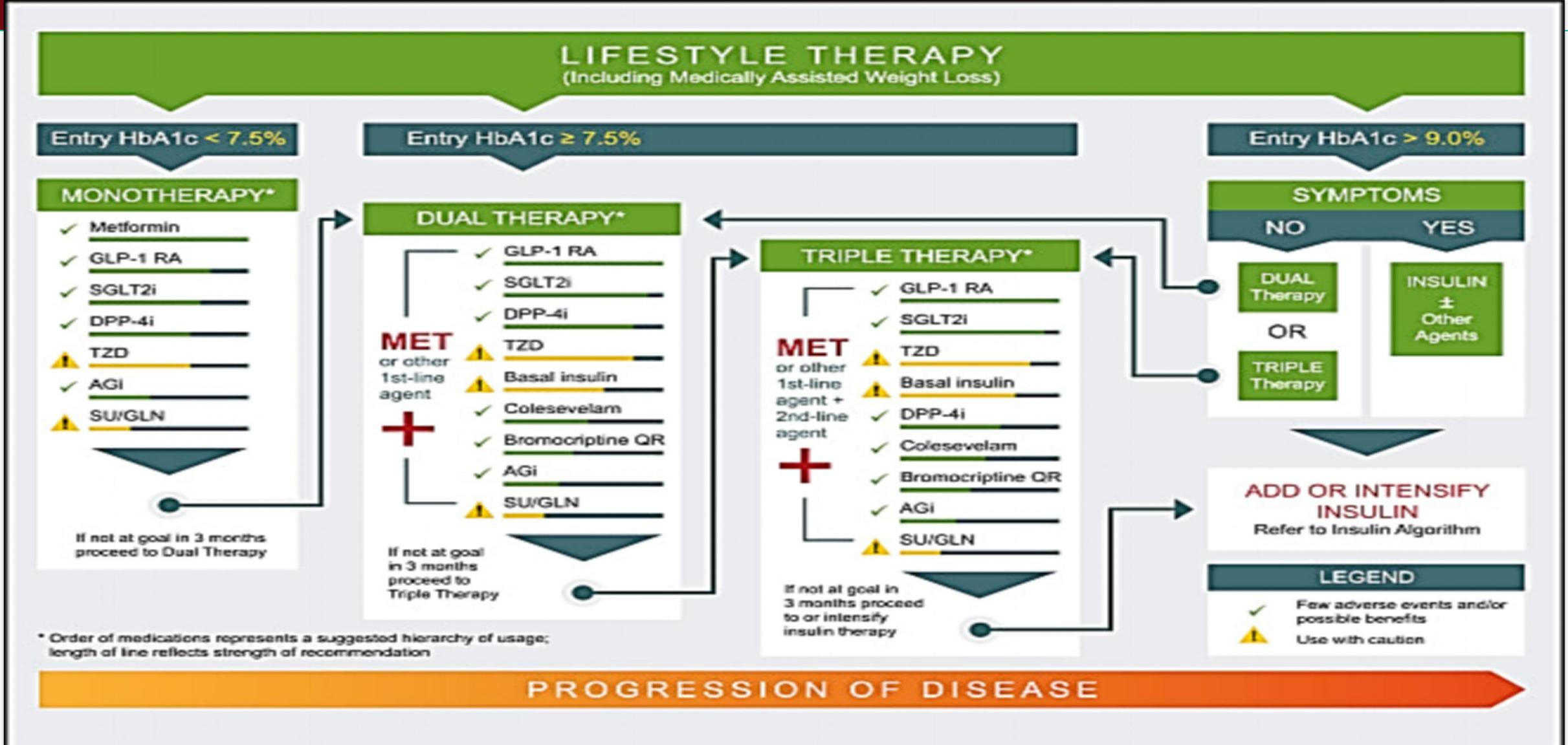
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# Oral hypoglycemic agents



**LEGEND**

- ✓ Few adverse events and/or possible benefits
- ⚠ Use with caution

\* Order of medications represents a suggested hierarchy of usage; length of line reflects strength of recommendation

# Case 6



- A 60yr old known Diabetic for past 30yrs on:
  - Glucophage 1gm bd and
  - Daonil 5mg bd, was having difficulty achieving control,
  - He was also placed on dapaglifloxin 10mg which showed some improvement but was not sustained.
- How will you adjust the patient's drug to achieve good glycemic control?

# Indications for permanent pacing



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- In bradycardia caused by reversible etiologies, permanent pacing is not warranted.
- The **indication for pacing is based on the severity of bradycardia** rather than its etiology.
- Symptomatic sinus bradycardia as a result of medical therapy is an indication for permanent pacing if there are no alternative treatment options.
- Typically from:
  1. Sinus Node Dysfunction
  2. AV Block

# Case 6



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1. Counsel patient on dietary modification
2. Stop and change the Daonil to Glimeperide
3. Early insulinization



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# 8. What of Diabetes in Pregnancy?

# Case 7

- A 37yr old teacher, presented to the gynaecology emergency at 14weeks of gestation with a RBS of 13mmol/l.
- She has had two previous pregnancies carried to term.
  1. Which other history will you be interested in making a diagnosis.
  2. What is your diagnosis

# Case 8

- A 42yr old business woman presented to the clinic at a gestational age of 27weeks with a FBS of 5.6mmol/l,
- There is a previous history of macrosomic babies in the past two pregnancies.
  1. What is the diagnosis?
  2. What is the reason for the diagnosis

# Diagnosis of GDM



Criteria	Diagnosis
IADPSG (75 gram OGTT) [6]	<b>At least one value meeting the threshold:</b> Fasting plasma glucose $\geq 5.11$ mmol/l 1-h plasma glucose $\geq 10$ mmol/l 2-h plasma glucose $\geq 8.5$ mmol/l
Old ADA (100g OGTT) [11]	<b>At least two values meeting the thresholds:</b> Fasting plasma glucose $\geq 5.28$ mmol/l 1-h plasma glucose $\geq 10$ mmol/l 2-h plasma glucose $\geq 8.61$ mmol/l 3-h plasma glucose $\geq 7.78$ mmol/l
WHO (75 g OGTT) [12]	<b>At least one value meeting the threshold:</b> Fasting plasma glucose $\geq 7$ mmol/l 2-h plasma glucose $\geq 7.78$ mmol/l

IADPSG, International Association of Diabetes and Pregnancy Study Groups; ADA, American Diabetes Association; WHO, World Health Organisation.



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# Coronary Angiography & Percutaneous Coronary Intervention

For Heart Attacks/Myocardial Infarction, Angina, Ischemic Heart Disease/Failure-  
Stents, Balloon Angioplasty, & Chronic Total Occlusions (CTO) of Heart Vessels

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# Risk factors for GDM: Suspect and Test!!!



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- Previous gestational diabetes.
- A large baby in their last pregnancy, e.g. >4.5kg.
- A previous unexplained stillbirth/perinatal death.
- Maternal obesity (BMI above 30kg/m<sup>2</sup>).
- Family history of diabetes (first-degree relatives).
- Family origin with a high prevalence of type 2 diabetes:
  - South Asian.
  - Black Caribbean.
  - Middle Eastern.
- Polyhydramnios

## 1. DIAGNOSIS OF GESTATIONAL DM

### 2. LIFESTYLE MODIFICATIONS OF ALL

- Diet Therapy from Dietitian
- Exercise especially Post Meal
- Self Monitoring of Blood Glucose

### 3A. NOT reached Glycemic Targets (**INVOLVE SPECIALIST**)

- Consider Pharmacologic Options and Pattern of Elevation

### 3B. REACHED GLYCEMIC TARGETS

### 4A. AGREEABLE TO INSULIN

### 4B. NOT AGREEABLE TO INSULIN

### 5A. Begin insulin. (First Line Therapy) based on

- Pattern of Hyperglycemia
- Refer to Specialist if poor control

### 5B. Consider Oral Therapy based on:

- Fasting and/or PP hyperglycemia
- High Pre-pregnancy BMI or Weight Gain
- History of PCOS +/- Insulin Resistance

### 5C. Metformin

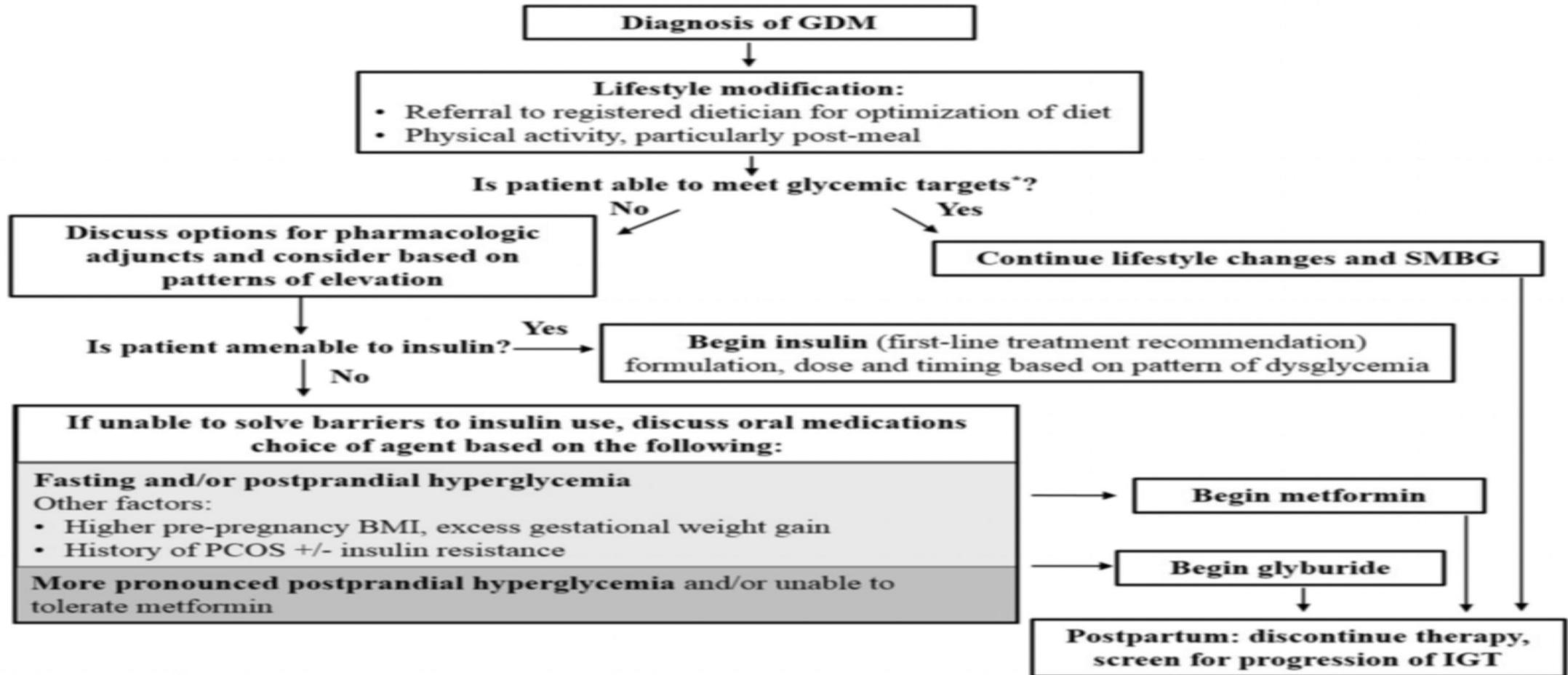
### 5D. Glyburide

- If more Pronounced Postprandial Hyperglycemia and/or
- Unable to tolerate Metformin

- Self Monitoring of Blood Glucose ONLY

## 6. Post Partum: Discontinue Therapy, Screen for Progression of IGT

# Management of GDM



\*Glycemic targets (mg/dL): fasting <95; 1 hour postprandial <140; 2 hour postprandial <120 [3,4]

# Monitoring of GDM: Clinic Visits



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- **Monitoring Blood Glucose and aim for:**
  - a. Fasting BG <5.9mmol/L
  - b. 1h postprandial BG <7.8mmol/L
  - c. Some advocate lower BG targets for obese women, e.g. <5.1 fasting and <7.0 after meals),
- **Monitor maternal weight, BP, and urinalysis.**
- **Monitor fetal size (abdominal circumference)**
  - Increase treatment if abdominal circumference 270th percentile.



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# Treatment of GDM -1



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- Diet and lifestyle advice.
- Reinforce dietary advice throughout pregnancy
- Advice on physical activity (at least 30min daily).

# Treatment of GDM - 2



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- Oral hypoglycaemic agents if:
  - Diet and exercise inadequate or
  - Incipient macrosomia: metformin/glibenclamide;
- Insulin therapy-
  - NPH and/or rapid-acting insulin analogues (aspart and lispro)

# Treatment of GDM - 3



- At 36 weeks clinic visit, discuss and document.
  - Mode and timing of delivery,
  - BG management and insulin infusion rate for delivery,
  - Increased risk of type 2 diabetes and evidence for delaying and prevention (diet and lifestyle or metformin).
- Benefits of breastfeeding (mother and baby)
- Options for safe, effective post-partum contraception
- Post-partum follow-up -fasting glucose or OGTT 6 weeks post-delivery.



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**THANK YOU SO MUCH  
FOR YOUR ATTENTION**



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