# DIABETES MANAGEMENT CLINICAL GUIDELINE

## Overview:

This guideline provides evidence-based recommendations for the management of Type 2 Diabetes Mellitus in adult patients.

## Diagnosis Criteria:

- Fasting plasma glucose ≥126 mg/dL (7.0 mmol/L) - 2-hour plasma glucose ≥200 mg/dL (11.1 mmol/L) during OGTT - HbA1c ≥6.5% (48 mmol/mol) - Random plasma glucose ≥200 mg/dL with symptoms

## Initial Treatment Approach:

## First-Line Therapy:

- Metformin 500-850mg twice daily (BID) with meals - Start with 500mg BID, increase gradually to minimize GI side effects - Maximum dose: 2000mg daily - Contraindications: eGFR <30 mL/min/1.73m², acute kidney injury

## Lifestyle Modifications:

- Weight reduction: 5-10% of body weight if overweight - Regular physical activity: 150 minutes/week moderate intensity - Mediterranean or DASH diet pattern recommended - Smoking cessation counseling

## Second-Line Therapy Options:

## If HbA1c remains >7% after 3 months of metformin:

## 1. SGLT2 Inhibitors (if eGFR >30):

- Empagliflozin 10mg daily, may increase to 25mg - Canagliflozin 100mg daily, may increase to 300mg - Monitor for genital mycotic infections, UTIs

## 2. GLP-1 Receptor Agonists:

- Liraglutide: Start 0.6mg daily x 1 week, then 1.2mg daily - Semaglutide: 0.25mg weekly x 4 weeks, then 0.5mg weekly - Check for personal/family history of medullary thyroid cancer

## 3. DPP-4 Inhibitors:

- Sitagliptin 100mg daily (50mg if eGFR 30-50) - Linagliptin 5mg daily (no dose adjustment needed)

## 4. Sulfonylureas:

- Glipizide 5mg daily initially, max 20mg daily - Monitor for hypoglycemia, especially in elderly

## Insulin Therapy:

## Indications for insulin:

- HbA1c >9% at diagnosis with symptoms - Failure to achieve target with multiple oral agents - Contraindications to other medications

## Basal Insulin Protocol:

- Start with 10 units daily or 0.1-0.2 units/kg - Adjust by 2-4 units every 3-4 days based on fasting glucose - Target fasting glucose: 80-130 mg/dL

## Monitoring:

- HbA1c every 3 months until stable, then every 6 months - Annual eye exam, foot exam, nephropathy screening - Blood pressure target: <130/80 mmHg - LDL cholesterol target: <100 mg/dL (or <70 if CVD)

## Hypoglycemia Management:

- Mild (glucose 54-70 mg/dL): 15g carbohydrates - Severe (glucose <54 mg/dL): 20g carbohydrates - Recheck in 15 minutes, repeat if needed

## Special Populations:

## Elderly Patients (>65 years):

- Less stringent HbA1c targets (7.5-8.5%) - Avoid sulfonylureas if possible due to hypoglycemia risk - Consider functional status and comorbidities

## Pregnancy:

- Target fasting glucose: 70-95 mg/dL - Target 1-hour postprandial: <140 mg/dL - Target 2-hour postprandial: <120 mg/dL - Insulin preferred over oral agents

## Chronic Kidney Disease:

- Metformin contraindicated if eGFR <30 - Adjust medication doses based on kidney function - Monitor for lactic acidosis

## Drug Interactions:

- Metformin + Contrast: Hold 48 hours before/after contrast - Warfarin + Sulfonylureas: Monitor INR closely - Beta-blockers may mask hypoglycemia symptoms

## Side Effects to Monitor:

- Metformin: Lactic acidosis (rare), GI upset, B12 deficiency - SGLT2 inhibitors: UTIs, genital infections, DKA - GLP-1 agonists: Nausea, pancreatitis (rare) - Insulin: Hypoglycemia, weight gain

## Emergency Situations:

- DKA: pH <7.3, glucose >250 mg/dL, ketones present - HHS: Glucose >600 mg/dL, severe dehydration, altered mental status - Severe hypoglycemia: Glucagon 1mg IM/SC if conscious level impaired

## Quality Metrics:

- HbA1c <7% for most adults - Blood pressure <130/80 mmHg - LDL cholesterol <100 mg/dL - Annual eye and foot exams completed - Nephropathy screening annually

This guideline should be used in conjunction with clinical judgment and individualized patient care.