An Update on Oral Health Considerations of Diabetes Mellitus – Special tips to a General Dental Practitioner.

*Presented By*

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Definition

Diabetes mellitus is a metabolic disorder characterized by dysregulation of carbohydrate, protein, and lipid metabolism leading to elevation of blood glucose levels, resulting from either a defect in insulin secretion from the pancreas, a change in insulin action, or both.

Diabetes – to siphon / pass through
Mellitus – sweet
Classification

- Type 1-Insulin dependent DM (IDDM)
- Type 2-Non-Insulin dependent DM (NIDDM)
- Type 3-Gestational Diabetes
- Others-
  - Genetic defects
  - Pancreatic disease
  - Infections
  - Drug induced
  - other genetic syndromes
Risk Factors

- Family History
- Age
- Inactivity
- Overweight
# Clinical Features

<table>
<thead>
<tr>
<th>Early Features</th>
<th>Late Features</th>
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</thead>
<tbody>
<tr>
<td>Polyuria</td>
<td>Abdominal Pain</td>
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<tr>
<td>Polydipsia</td>
<td>Dehydration</td>
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<tr>
<td>Polyphagia</td>
<td>Nausea</td>
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<td>Confusion</td>
<td>Paresthesia</td>
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<tr>
<td>Weakness</td>
<td>Shock</td>
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<td></td>
<td>Coma &amp; Death</td>
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</tbody>
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Diagnosis

Based on History, Clinical Signs & Symptoms

Blood Examination

- Nonfasting plasma glucose $\geq 200$mg/dl
- Fasting plasma glucose $\geq 126$mg/dl
- Two hr postprandial glucose $\geq 200$mg/dl.
• Oral Glucose Tolerance Test
• Glycated Haemoglobin
• Plasma fructosamine
• Blood Lipids
Urine Testing
• For presence of glucose, ketone bodies, and proteins.
Management

- DIET
- EXERCISE
- WEIGHT CONTROL
- Oral Agents
- Intradermal injection - Insulin
Oral Manifestations in DM

- Periodontal disease
- Dental caries
- Salivary gland dysfunction
- Altered wound healing
- Fungal infections
- Oral burning and taste disturbances
- Lichen planus & Lichenoid reactions
- Geographic tongue & Fissured tongue
- Halitosis
Periodontal disease

- Diabetes is a risk factor for the prevalence & severity of gingivitis and periodontitis.
- 3 times greater in diabetic patients
- Multiple Periodontal abscess – Most common finding.
Dental caries

• Controversy
• Due to Xerostomia & ↑ glucose in GCF

Salivary gland dysfunction

• Xerostomia
  40-80% of poorly controlled diabetes.
Drugs
Delayed wound healing

As a result of production of collagenase

dissolution of recently synthesized collagen

Alteration of wound healing → Recurrent infections
Fungal infections

Oral candidiasis
Mucormycosis (rarely)
Denture stomatitis
Angular cheilitis

As a result of Xerostomia

↑ Salivary glucose levels
& Immune dysregulation
Burning mouth

Occurs due to

Peripheral neuropathy
Xerostomia
Candidiasis

Xerostomia
Disordered - glucose receptors

taste abnormalities
Lichen planus & Lichenoid reactions

Side effects of Oral hypoglycemic drugs
(Chlorpropamide)
DENTURE STOMATITIS

ERYTHEMATOUS CANDIDIASIS

ANGULAR CHELITIS
Key dental considerations in Diabetic patients

- Appointment timings should be after normal breakfast early to mid morning on normal antidiabetic treatment as it reduces the risk of hypoglycemia...
- Check the blood sugar level
- Give oral glucose
- Prophylactic antibiotic therapy
• Stress reduction conscious sedation in anxious pts LA can be used safely
• Drugs
Aspirin and Steroids should be avoided as they enhance the effect of oral hypoglycemics
• Frequent dental visits to assess plaque control

• Symptomatic treatment for burning mouth

• Saliva substitutes for Xerostomia
Management of Diabetic Emergencies in Dental office

Hypoglycemic shock
- 15gm of oral carbohydrate.
- or 50ml of 50% dextrose solution.iv.
- or 1mg of glucagon.iv.im.or sc.

Hyperglycemia
- Opening the airway and administering oxygen,
- supporting circulation, monitoring vital sign
- patient should be transported to a hospital as soon as possible
Conclusion

- DM is a metabolic condition affecting multiple organ systems.
- Dental professionals should have a thorough understanding of the implications of diabetes on dental care and help these patients achieve and maintain the best possible oral health.
THANK YOU 😊