

Diabetes mellitus & Dental management

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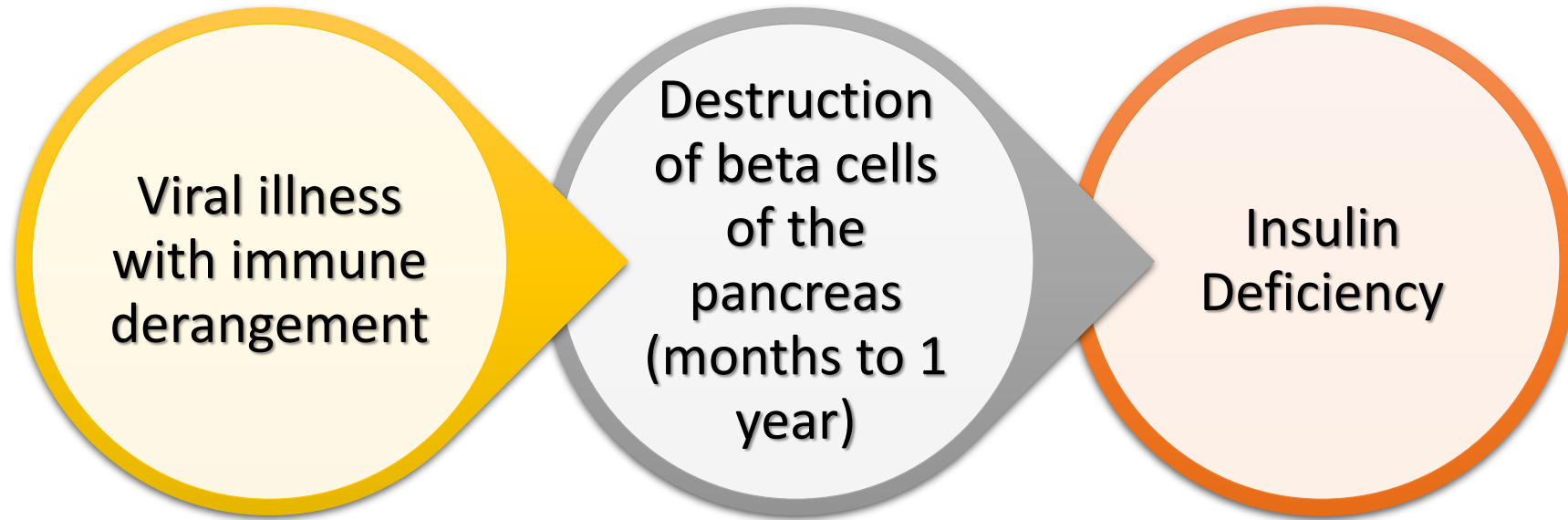
Diabetes mellitus

- Is a condition of chronically elevated blood glucose.
- The fundamental underlying abnormality is a net (relative or absent) **deficiency** of the hormone insulin.
- Insulin is essentially the only hormone that can lower blood glucose.
- Its affects 20% of the Iraqi population.

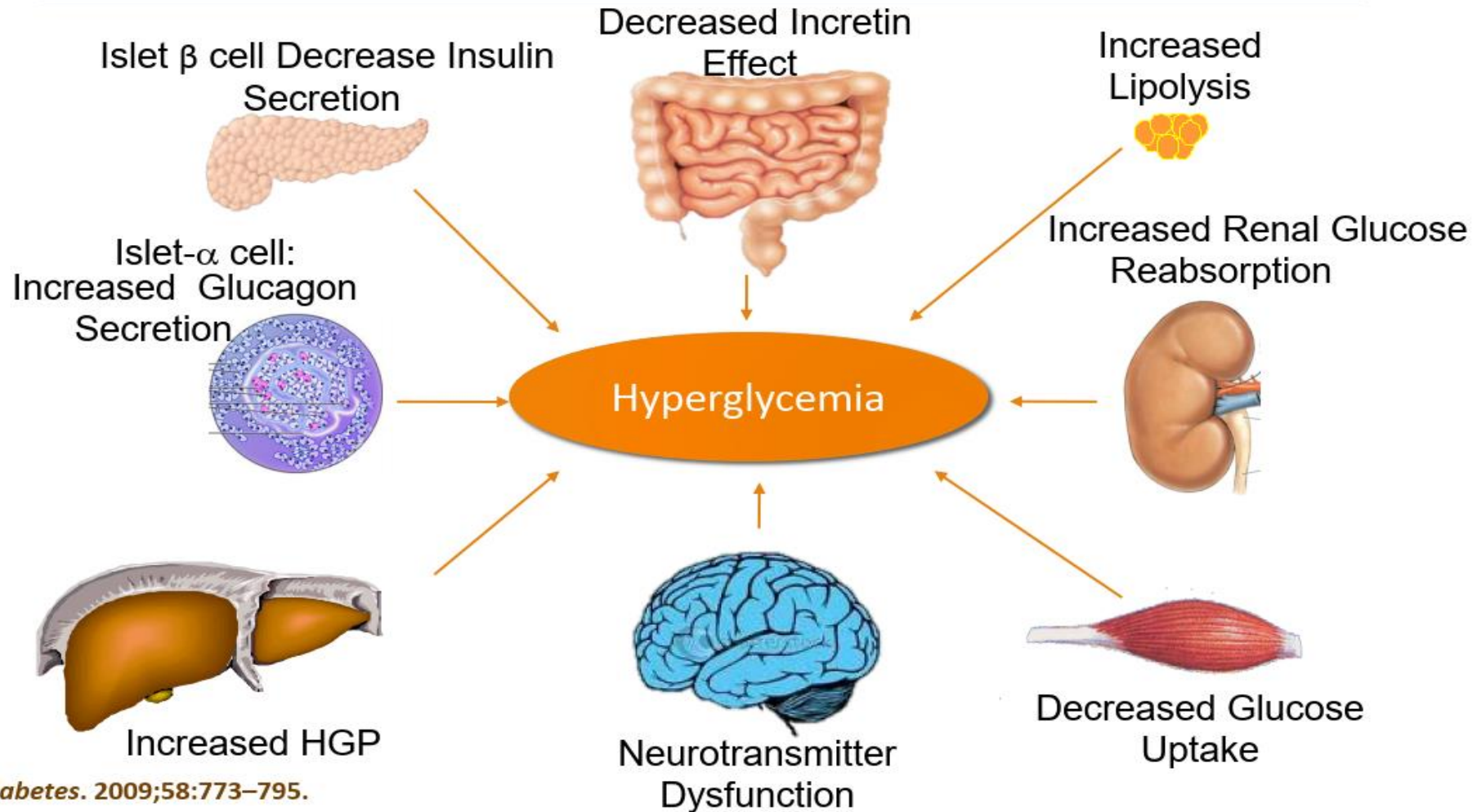
Classification of diabetes

- Type 1 (5-10% of all diabetes)
 - Type 1-A-Autoimmune (95%) -antibody positive.
 - Type 1 -B-Idiopathic (5%)
- Type 2 (90-95% of all diabetes)
- Gestational diabetes (GDM)
- Others

Pathophysiology of type 1 diabetes



Pathophysiology of type 2 diabetes



Classic symptoms

- Polyuria (*Osmotic diuresis*)
- Polydipsia
- Polyphagia (predilection for sweet foods)
- Weight loss
- **All called classic symptoms of diabetes (absent in 50%)**

- **Other symptoms**
- Tiredness, fatigue, lethargy
- Blurring of vision
- Pruritus vulvae, balanitis (genital candidiasis)

Diagnosis

Symptoms of diabetes plus random plasma glucose concentration ≥ 200 mg/dL

- Or

Fasting plasma glucose ≥ 126 mg/dL (repeated twice if no symptoms)

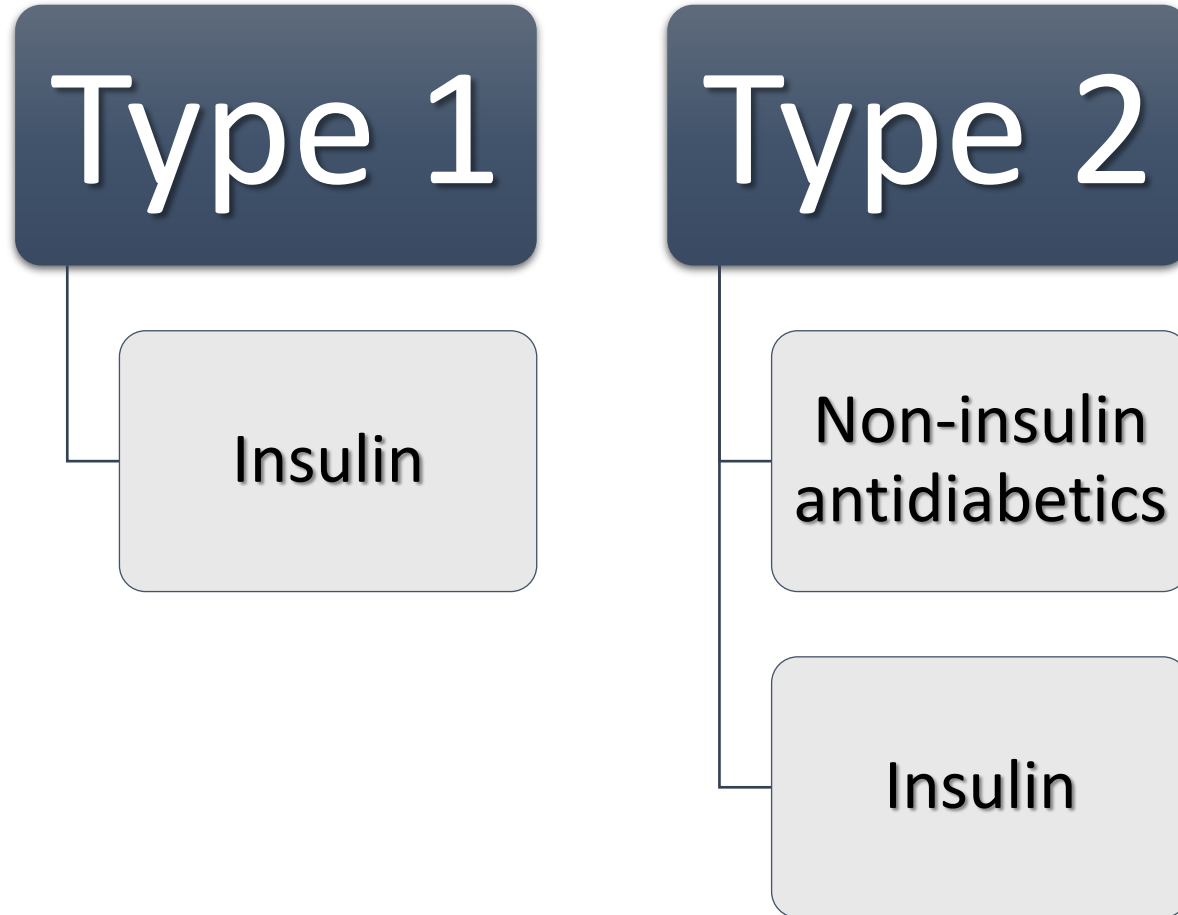
- Or

HbA1c $\geq 6.5\%$ (repeated twice if no symptoms)

- Or

Two-hour plasma glucose ≥ 200 mg/dL during an oral glucose tolerance test(OGTT) .
(repeated twice if no symptoms)

Treatment modalities of diabetes mellitus



Complications of diabetes

Acute

- Diabetic ketoacidosis (DKA)
- Non-ketotic hyperosmolar diabetic coma (Hyperosmolar state),
Hyperglycemic hyperosmolar state (HHS)
- Hypoglycemia

Chronic

- Macrovascular (ASCVDs)
- Microvascular:
 - Retinopathy
 - Neuropathy
 - Nephropathy

Oral complications of poorly controlled diabetes

Xerostomia

Burning sensation

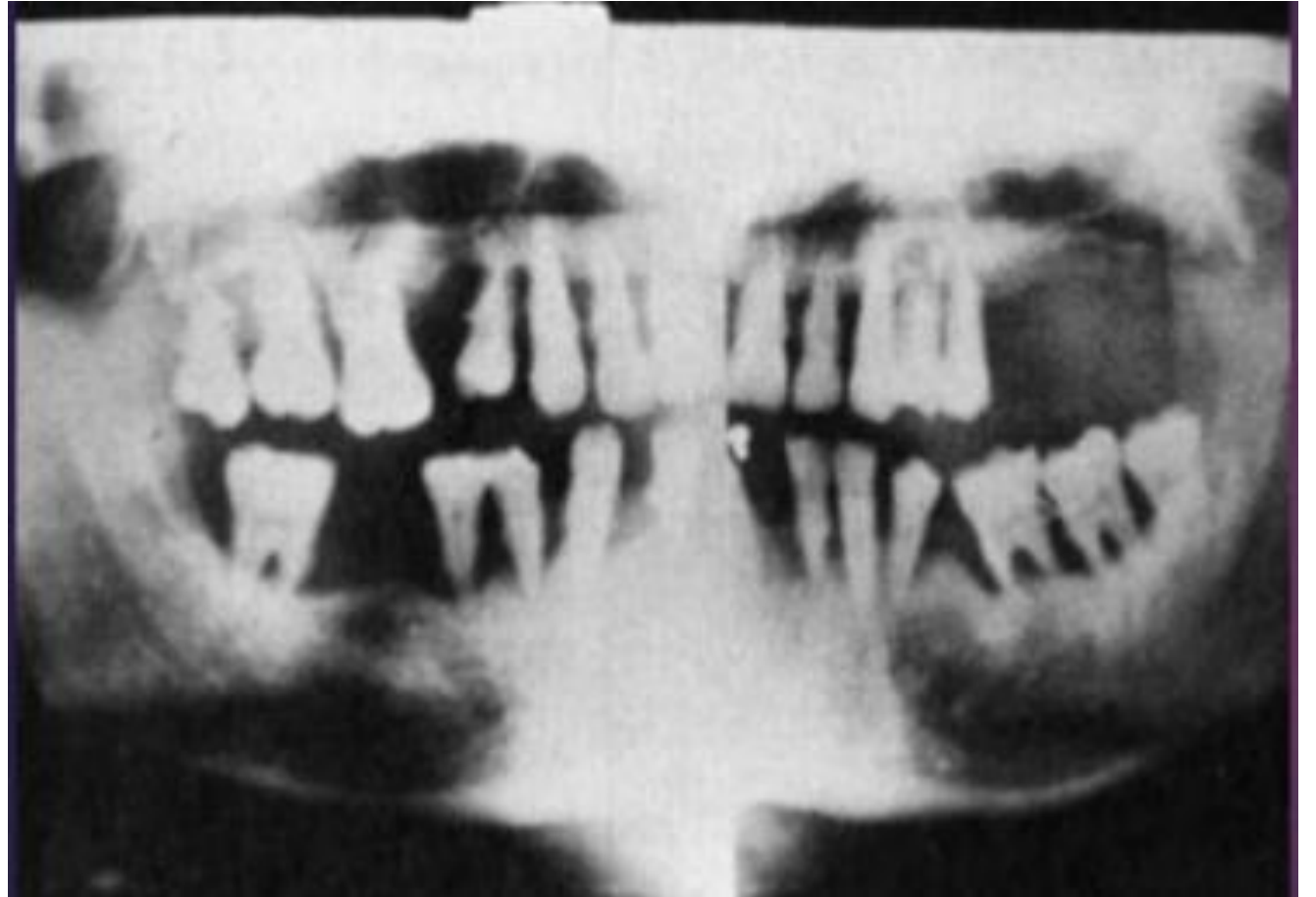
Gingivitis and periodontitis

Dental caries

Bacteria, viral, and fungal infections

Periapical abscesses

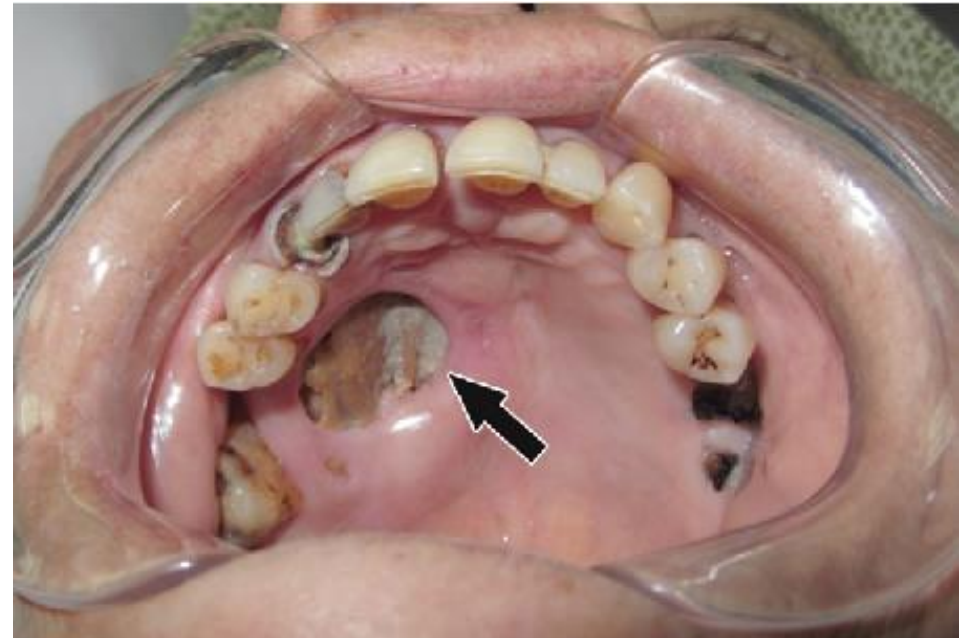
- Severe progressive periodontitis



- Oral moniliasis in patient with DM



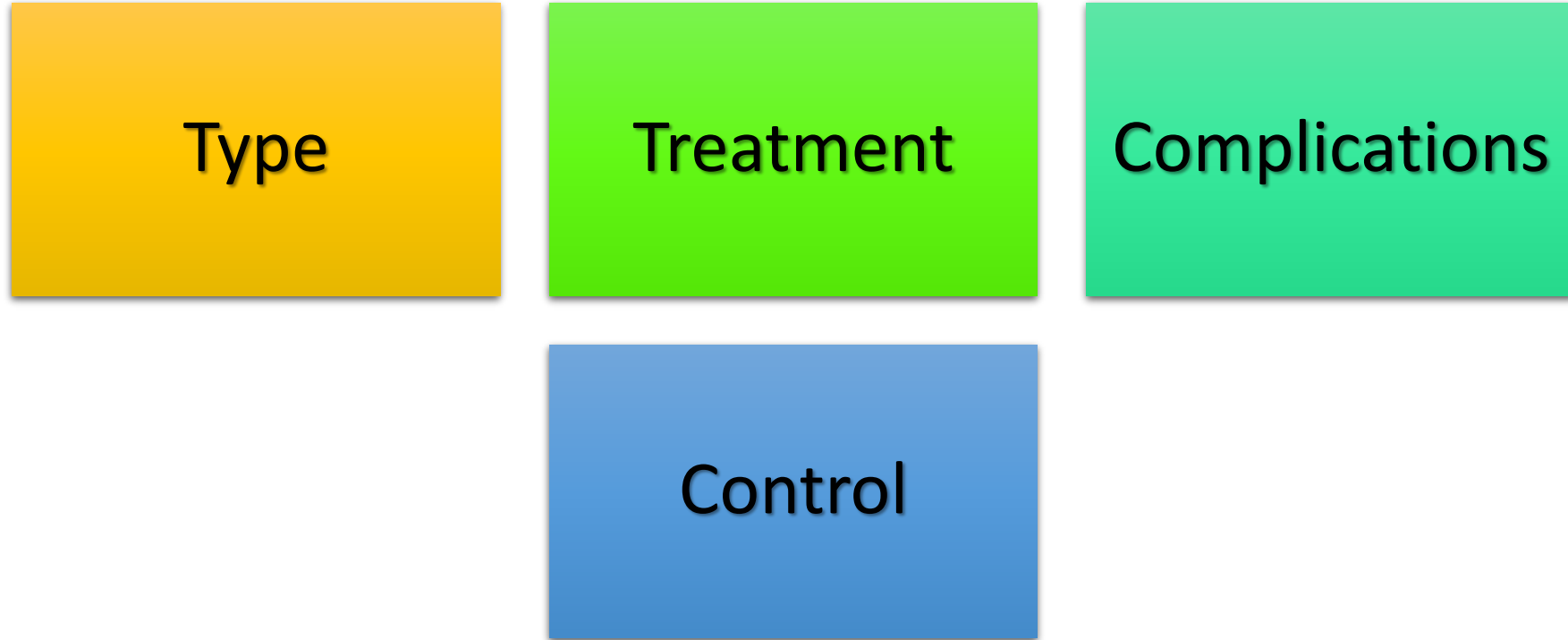
Mucor mycosis



Medical considerations

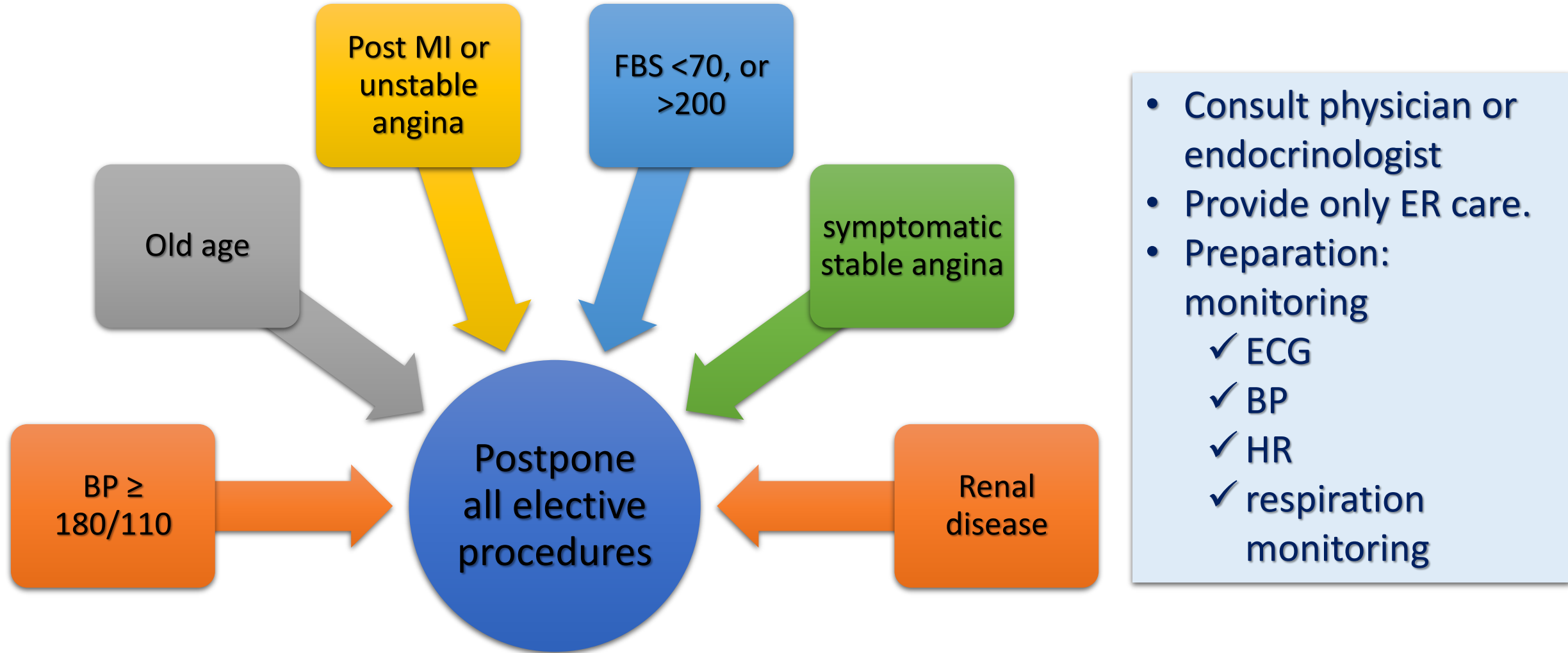
- Any dental patient whose condition remain undiagnosed and has cardinal symptoms of diabetes should be referred to endocrinologist for diagnosis, and treatment.

Medical considerations “known diabetes”



These provides indications about severity of DM, and its control

Dental management of patient with diabetes



Dental management of patient with diabetes

Controlled
DM,
procedures
can be
performed

Morning appointment.

Normal breakfast, medications and/or insulin is taken.

Avoid anxiety and excessive sedation

Maintain verbal contact with the patient

Avoid trauma as possible

A source of glucose like sweet orange juice should be available in case of hypoglycemia.

Acute oral infection

**Non-
insulin
treated**

- Endocrinologist consultation.
- Adjustment of therapy, including insulin initiation

**Insulin
treated**

- Endocrinologist consultation.
- Increase insulin dosage

Acute oral infection

Brittle, uncontrolled, high insulin dosage



Culture and sensitivity

Antibiotics

Acute oral infection

Methods
of
treatment

Warm oral rinses

Surgical drainage

Pulpotomy, pulpectomy, tooth extraction

Antibiotics

Major Goal “avoid hypoglycemia”

- The most common diabetes emergency in the dentist clinic.
- Life threatening
- Can be confirmed by glucometer checking of capillary glucose
- Blood glucose < 70 mg/dL
- Severe hypoglycemia < 55 mg/dL

Hypoglycemic risk

Elderly

Insulin

Sulphonylureas like glibenclamide, gliclazide, glimepride

Renal failure

Symptoms of hypoglycemia

Adreno glycopenic

- Shakiness, anxiety, nervousness, palpitations, tachycardia, sweating, feeling of warmth, pallor, coldness, clamminess, dilated pupils (mydriasis), feeling of numbness.

Neuro glycopenic

- Abnormal mentation, crying, irritability, personality change, emotional lability, lethargy, confusion, amnesia, dizziness, difficulty speaking, ataxia, incoordination, sometimes mistaken for "drunkenness", focal or general motor deficit, paresthesia, headache, stupor, coma, abnormal breathing, generalized or focal seizures

Non- specific

- Hunger, borborygmus, nausea, vomiting, abdominal discomfort, headache

Management of hypoglycemia

Conscious

- 15g of CHO per oral
- ✓ Orange juice
- ✓ 4 tablespoon sugar
- ✓ Sweet gel/honey on buccal mucosa

Unconscious

- 15g per I.V.
- ✓ 75-100 ml 20% dextrose, or 50 ml 50% dextrose
- ✓ Glucagon 1mg I.M, I.V

- The signs and symptoms of hypoglycemia will improve within 10-15 min.
- Continue observation for the next hour, and prove euglycemia by glucometer before discharge

Dental management of patient with diabetes

Post
operative

Keep the same content of food as recommended.

Consult endocrinologist for dietary plan, if the patient is unable to eat postop.

Give antibiotics

Thanks