Pancreatic Hormones
  insulin
  glucagon

Diabetes mellitus: abnormal carbohydrate metabolism with inappropriate persistent hyperglycemia

Type I (IDDM, juvenile onset)

Type II (NIDDM, adult onset)

Systemic complications: angiopathy

**Dental complications**

Management of DM patient
  Evaluation  ASA risk assessment
    blood glucose (mg/dl) (serum glucose, plasma glucose)
    glycosylated hemoglobin HbA1c (%)  

ASA risk assessment
  ASA 2
  ASA 3
  ASA 4


Type 1 DM
  1. Insulin
     MA: replaces endogenous insulin
     ADR’s hypoglycemia
     ex: Novolog, Humalog, Lente, Lantus

Type 2 DM
  1. Sulfonylureas: (secretagogues)
     MA: ↑ release of insulin from beta cells, ↓ serum glucagon, ↑ insulin sensitivity in target tissues
     ADR’s: hypoglycemia, blood dyscrasias, GI, cutaneous, liver damage
     ex: glimeperide, glyburide, glipizide

  2. Biguanides: (sensitizer)
     MA: ↓ hepatic production of glucose, ↑ insulin sensitivity in target tissues
     ADR’s: GI, lactic acidosis
     ex: metformin
3. Meglitinide derivatives ("glinides", non-sulfonylurea secretagogues):
   MA: ↑ release of insulin from beta cells,
   ADR’s: hypoglycemia, weight gain, must be taken with meals
   ex: repaglinide (Prandin), nateglinide (Starlix)

4. Thiazolidinediones ("glitizones", "TZD’s") (sensitizer)
   MA: ↑ insulin sensitivity in target tissues
   ADR’s: weight gain, hepatotoxicity
   ex: pioglitazone (Actos), rosiglitazone (Avandia)

5. Dipeptidyl-Peptidase-4 inhibitors (secretagogue)
   MA: ↑ insulin synthesis, oppose glucagon
   ADR’s: weight gain, pancreatitis
   ex: sitagliptin (Januvia)

6. α-glucosidase inhibitors (non-secretagogue)
   MA: delay/prevent digestion of ingested carbohydrate (small intestine), delays glucose adsorption
   ADR’s: GI
   ex: acarbose (Precose), miglitol (Glyset)

7. Glucagon-Like Peptide-1 Receptor Agonists (incretin mimetics, secretagogues)
   MA: ↑ release of insulin from beta cells, ↓ serum glucagon, ↑ satiety
   ADR’s: GI, hypoglycemia, injection
   ex: exenatide (Byetta)

8. Sodium Glucose Transporter-2 Inhibitors (non-secretagogue)
   MA: blocks reabsorption of glucose in kidney
   ADR’s: GI, genital yeast infections, UTI, ↑ urination
   ex: canagliflozin (Invokana)

9. Amylin analogues (non secretagogue)
   MA: slow down gastric emptying, ↑ satiety
   (amylin secreted along with insulin by pancreatic β- cells)
   ADR’s: GI, headache, ↑ risk of hypoglycemia
   ex: pramlintide (Symlin)

10. bile-acid sequestrants (colesevelam / Welchol)
    MA: lowers LDL cholesterol / diabetes?
    ADR’s: GI, can ↑ serum triglycerides
    ex: colesevelam (Welchol), colestipol (Colestid), cholestyramine (Questran)

Medical emergencies
   hypoglycemia (too much insulin, not enough food, too much exercise)
   symptoms: headache, mental confusion, blurred vision → loss of consciousness → coma → death

   hyperglycemia (lack of insulin, elevated blood glucose)
   symptoms: GI, mental confusion, ↑ urination, ↑ pulse, ↓ BP, ketoacidosis → loss of consciousness → coma → death

DH Considerations
   at risk for ↑ for caries
   at risk for infection and ↓ wound healing
   hypoglycemia possible with several meds
   manage emergency as hypoglycemia (give sugar)
   ASA classification - must know level of glucose control