Drugs for Diabetes

I. Physiology
  A. Pancreas
    1. islets of Langerhans
      a. α cells - produce glucagon
      b. β cells - produce insulin
  B. Insulin

II. Disease = Diabetes mellitus
    1. hyperglycemia
  A. Clinical classifications
    1. type 1
    2. type 2
    3. gestational diabetes
    4. other
  B. Effects
  C. Treatment goal

III. Type 1 Diabetes Treatment
  A. Regular insulin
    1. Humunin R
    2. Novolin R
  B. Analogs
    1. rapid & short
      a. insulin lispro (Humalog)
      b. insulin aspart (Novolog)
      c. insulin glulisine (Apidra)
    2. intermediate
      a. NPH
      b. Humulin N
      c. Novolin N
    3. long acting
      a. insulin glargine (Lantus & Basaglar)
      b. insulin detemir (Levemir)
    4. combinations
      a. Huminlin R
  C. Synthetic amylin analog
    1. pramlintide (Symlin)

IV. Type 2 Diabetes Medications
  A. Strategies
  B. insulin production
    1. sulfonlyureas
      a. glyburide (Diabeta & Glynase)
      b. glipizide (Glucotrol)
      c. glimepiride (Amaryl)
    2. glinides
      a. repaglinide (Prandin)
      b. nateglinide (Starlix)
    3. GLP-1 & GIP receptor agonists
        1) incretins
          a) GLP-1
          b) GIP
          c) dipeptidyl peptidase-4
        2) HbA_{1c}

a. exenatide (Byetta)
b. liraglutide (Victoza)
c. dulaglutide (Trulicity)
d. semaglutide (Ozempic)
1) (Rybelsus)
a) SNAC
e. weight loss
1) (Saxenda)
2) (Wegovy)
4. block incretin breakdown
a. DPP-4 inhibitors
1) alogliptin (Nesina)
2) linagliptin (Tradjenta)
3) saxagliptin (Onglyza)
4) sitagliptin (Januvia)

C. insulin sensitivity
1. metformin (Fortamet & Glucophage)
2. TZDs
a. pioglitazone (Actos)
b. rosiglitazone (Avandia)

D. glucose excretion
1. SGLT2 Inhibitors
a. canagliflozin (Invokana)
b. dapagliflozin (Farxiga)
c. empagliflozin (Jardince)

E. Other
1. α-Glucosidase inhibitors
2. acarbose (Precose)
3. miglitol (Glyset)