DM Pharmacology

Biguanides

- **Med Examples**
  - metformin (Glucophage, Glucophage XL, Fortament)
  - Combo: metformin + glyburide (Glucovance)
- **Actions**
  - ↑ Tissue sensitivity to insulin
  - ↓ Hepatic glucose production from stored glycogen
  - ↓ Absorption of glucose in small intestine
- **Nursing Considerations**
  - No hypoglycemia or wt gain
  - Causes lactic acidosis in dehydrated pt (weakness, fatigue, muscle & stomach pain)
  - No used in impaired renal fx
  - S/E: GI, lactic acidosis, headache, dizziness, fatigue, agitation, bitter or metallic taste
  - Stop 48 hrs prior to giving dyes

2nd Generation Sulfonylureas

- **Med Examples**
  - glipizide (Glucotrol)
  - glyburide (DiaBeta, Micronase)
  - glimepiride (Amaryl)
- **Actions**
  - ↓ Insulin resistance
  - Stimulates B-cells to secrete more insulin
  - Onset, peak, duration
  - ↓ Glucose prod by liver
- **Nursing Considerations**
  - Hypoglycemia: give 30 min prior to meals
  - Interactions ċ NSAIDS, warfarin, sulfonamides
  - S/E: weight gain, GI & neuro effects (nervousness, tremors, confusion), skin rash, thrombocytopenia
  - Contraindicated in pregnancy

Alpha-glucosidase Inhibitors

- **Med Examples**
  - acarbose (Precose)
  - miglitol (Glyset)
- **Actions**
  - Delay CHO absorption
  - < ↑ in BG after meals
- **Nursing Considerations**
  - Give before meals ċ 1st bite of food
  - Most effective ċ ↑ fiber diet
  - Contraindicated: GI dysfunction
  - Hold if NPO or fasting
  - S/E: GI, rash, no weight gain, no hypoglycemia

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Non-sulfonylurea Insulin Sectetagogues

- **Med Examples**
  - Meglitinides
    - repaglinide (Prandin)
    - nateglinide (Starlix)
- **Actions**
  - Improves insulin action (stim B-cells to release insulin)
- **Nursing Considerations**
  - Monitor renal & liver fx
  - S/E: GI, wt. gain, hypoglycemia, cardio

Thiazolidinediones

- **Med Examples (insulin enhancing agents)**
  - Actos (pioglitazone)
  - Avandia (rosiglitazone)
- **Actions**
  - ↓ Insulin resistance
  - Improves BG control
- **Nursing Considerations**
  - Q3 mo LFT
  - Avandia - ↑ MI (not using anymore)
  - S/E: possible liver toxicity, wt gain, hypoglycemia, ↑ fx, hyperlipidemia, edema

DPP-4 Inhibitors

- **Med Examples**
  - Januvia (sitagliptin) – oral, most common
  - Galvus (vildagliptin) – oral, new
  - Onglyza (saxagliptin) – new, just recvd FDA approval
- **Actions**
  - ↑ Insulin
  - ↓ Glucose production
- **Nursing Considerations**
  - S/E: N, V, hypoglycemia

New Meds

- **Med Examples**
  - Incretin Mimetics: Byetta (exenatidine) – subQ only!
- **Actions**
  - Enhances insulin secretion
  - ↑ B-cell responsiveness
  - ↓ Glucagon secretion
  - Slows gastric emptying
  - Used ċ sulfonylureas-hypogl
- **Nursing Considerations**
  - S/E: N, V, wt loss, anorexia, no hypoglycemia, jitteriness

New Meds

- **Med Examples**
  - Cycloset (bromocriptine)
- **Actions**
  - ↓ Post prandial BG all day
  - Helps control BG thru brain chemistry
- **Nursing Considerations**
  - FDA just approved beg 2010

New Meds

- **Med Examples**
  - Symlin (pramlintide) – subQ only!
- **Actions**
  - ↓ Post-prandial BG
- **Nursing Considerations**
  - Separate subQ from insulin
  - S/E: N, V, anorexia, hypoglycemia

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Combo Meds

- **Med Examples**
  - Glucovance (metformin + glyburide)
  - Metaglip (metformin + glipizide)
  - Avandamet (metformin + rosiglitazone)
- **Advantages**
  - ↑ Compliance in 1 pill
  - ↓ Cost
  - Multiple actions at same time

Hyperglycemic Meds

- **Med Examples**
  - Glucagon
- **Actions**
  - ↑ Insulin: stimulates glycogen from liver
  - Tx insulin induced hypoglycemia
  - BG ↑ 15-20 min after admin
- **Nursing Considerations**
  - Administer subQ, IV, IM
  - Use in insulin shock, ER
  - Monitor BG
  - S/E: N, V, ↓ BP, allergy