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- Dopamine agonists
  - Amantadine
    - Uses:
      - Antiviral (influenza) medication
      - Treatment for Parkinson's disease
      - Treatment of sexual side effects from SSRI's
      - Prevention/minimization of weight gain from psychiatric medications
        - Hoffman, et al, 2012: not as effective as metformin for preventing weight gain from Zyprexa
      - Osmolex ER tablets
        - For drug-induced extrapyramidal reactions in adults
        - For Parkinson's disease
        - Initial dose 129 mg tab once in the AM
        - Dose can be increased to max dose of 322 mg once daily in the AM
        - Extended release tabs: 129 mg, 193 mg, 258 mg
        - In moderate to severe kidney disease:
          - Moderate: 1 dose every 48 hrs, increase dose every 3 weeks
          - Severe: 1 dose every 96 hrs, increase dose every 4 weeks
          - End-stage: contraindicated
    - Mechanism
      - Dopamine reuptake inhibition
      - Indirect agonist effects on dopamine neurons
      - Weak, non-competitive NMDA antagonist
      - Some anticholinergic properties
      - Neuroprotective properties
    - Pharmacodynamics
      - Time to peak 3.3 hours (range 1-4 hours)
      - Half-life 16-17 hours (range 10-31 hours)
      - Cleared by kidneys
    - Warnings and precautions
      - Falling asleep during activities of daily living
      - Somnolence
      - Suicidality
      - Depression
      - Hallucinations/psychotic behavior
      - Dizziness
      - Orthostatic hypotension
      - Withdrawal-emergent hyperpyrexia and confusion (if tapered abruptly)
      - Impulse control/compulsive behaviors
    - Side effects from pooled studies (in Parkinson's disease and rx of extrapyramidal side effects) of immediate release amantadine
      - 5-10% frequency
        - nausea
        - dizziness
        - insomnia
      - 1-5% frequency (note some of these side effects are much more likely in patients with Parkinson's disease)
        - depression OR anxiety OR irritability
        - hallucinations OR confusion
        - decreased appetite

- dry mouth
  - constipation
  - balance problems
  - headache
  - somnolence
  - diarrhea
- 0.1-1%
  - Congestive heart failure
  - Psychosis
  - Urinary retention
  - Dyspnea
  - Skin rash
  - Vomiting
  - Weakness
  - Slurred speech
  - Euphoria
  - Thinking abnormality
  - Amnesia
  - Hyperkinesia
  - Hypertension
  - Decreased libido
  - Visual disturbance
  - Corneal opacity or punctate subepithelial opacity
  - Corneal edema
  - Decreased visual acuity
  - Sensitivity to light
  - Optic nerve palsy
- Less than 0.1%
  - Convulsion
  - Leukopenia
  - Neutropenia
  - Eczematoid dermatitis
  - Oculogyric episodes
  - Suicidal attempt
  - Suicide
  - Suicidal ideation
- Mirapex (pramipexole) up to 1 mg/day
  - Helps with restless legs
  - Helps with bipolar depression
  - May augment SSRI's in unipolar depression
  - Side effects (in patients with Parkinson's disease) include
    - Movement disorder 21.1% vs. 11.4% placebo (more prevalent in Parkinson's disease)
    - **Dizziness 17.4% vs. 11.4% placebo**
    - **Hallucinations 16.5% vs. 0 in placebo** (likely more prevalent in Parkinson's disease)
    - **Insomnia 13.8% vs. 0 in placebo**
    - **Somnolence 12.8% vs. 2.9% placebo**
    - **Constipation 11.9% vs. 2.9% placebo**
    - **Nausea 11.9% vs. 5.7% placebo**
    - Headache 11.9% vs. 14.3% placebo
    - Lassitude 9.2% vs. 17.1% placebo
    - Confusion 7.3% vs. 0 in placebo (likely more prevalent in Parkinson's disease)
    - Swelling 6.4% vs. 2.9% placebo
- Ropirinole
  - Helps with restless legs
  - Augmentation for resistant MDD
    - Stanford-Duke study
      - Doses up to 12 mg/day

- Average dose 8 mg/day
  - Nausea, somnolence, insomnia most common side effects
- Bromocriptine 7.5-52.5 mg/day
- Pergolide 1-2 mg/day
- Carbergoline (Dostinex)
- Dihydreresidene (DAR-100a)
  - Highly selective D1 agonist
  - Crosses blood-brain barrier
  - Avoids side effects associated with non-selective (e.g., D1 and D2) dopamine agonists which act primarily through D2 receptor (like psychosis, nausea, impulsivity)
  - Improves cognitive functioning in schizotypal personality disorder
- Rotigotine
  - Neupro patch
  - FDA-approved for Parkinson's disease
  - 15 RCT, DB, placebo-controlled trials of over 1154 patients with Parkinson's
  - Dosing for patch in Parkinson's: 2 mg/24 hours; increase to 4 mg/24 hours after 1 week; max 6 mg/24 hours
  - Adverse effects:
    - Dizziness
    - Nausea/vomiting
    - Drowsiness/sleep attacks
    - Insomnia
    - Postural hypotension
    - Hallucinations