Pediatric Psychopharmacology

General issues to consider.
- Pharmacokinetic differences
- Availability of Clinical Data
- Psychiatric Disorders can be common in childhood.
- Early intervention may prevent disorders in adulthood.

Disorders Associated with Childhood

Attention Deficit Hyperactivity Disorder (ADHD).
- Age inappropriate problems with attention, learning, impulse control, and hyperactivity.
- 3-5% of children.
### Pharmacological treatments for ADHD

#### Psychostimulants
- Amphetamines
  - Eg. Dextroamphetamine (Dexedrine)
  - Advantages:
- Methylphenidate (*Ritalin*)
  - DA reuptake inhibitor.
- Rule out *bipolar disorder* before initiating stimulant therapy.
- Hypothesis – ADHD occurs because the brain is chronically *understimulated*.

### Potential Side-Effects of Stimulants
- Insomnia
- Nervousness
- Anorexia (loss of appetite)
- Dysphoria
- Sedation
- Growth Retardation
- Psychosis
- Stimulant treatment of ADHD does NOT lead to later substance abuse.

### Use of antidepressants for treatment of ADHD
- Norepinephrine and dopamine modulators probably more effective.
- Advantages – not a controlled substance, less possibility of abuse by others, dosing more convenient, treatment of comorbid depression.
Conduct Disorder - aggressive, destructive, antisocial behaviors sufficiently intense, frequent or chronic to warrant intervention.

- Pharmacological treatment.
  - Psychostimulants most commonly used and probably effective.
  - Anticonvulsants (carbamazepine), atypical antipsychotics (risperidone), and antidepressants (bupropion, fluoxetine) may also be effective.

Eating Disorders

- Commonly appear during late adolescence.
- More common in females.

Anorexia Nervosa

- Resistance to maintaining body weight at minimally safe standards.
- Distorted views of body image.

Treatment of anorexia nervosa

- Unimpressive response to pharmacological treatment.
- Pharmacological Options:
  - Opioid Antagonists (Naltrexone, ReVia)
    - Addicted to fasting?
  - SSRI Antidepressants
  - Atypical antipsychotics.
  - Lithium
**Bulimia Nervosa**
- Characterized by binging (eating large amounts of food) and then purging (use of self-induced vomiting, laxatives, and/or diuretics).
- Pharmacological treatment is often successful.
  - SSRI antidepressants preferred.

**Pharmacological treatment of other disorders in children and adolescents.**
- Psychosis – Atypical antipsychotics much preferred.
- Anxiety disorders – SSRIs are much preferred.
  - Benzodiazepines not clinically useful.

**Bipolar Disorder**
- Distinguished from ADHD by:
  - Reduced need for sleep.
  - Prolonged Rage Attacks (2-4 hours)
  - Hypersexuality
  - Flight of ideas
  - Psychotic symptoms
  - Family history of: bipolar, suicide, substance abuse, multiple divorces, multiple business startups.
### Treatment of bipolar disorder in children/adolescents similar to adult treatment.

- Lithium and anticonvulsants still most common.
- Use of atypical antipsychotics (e.g., olanzapine) either alone or combined with antidepressants or mood stabilizers is increasing.

### Pharmacological treatment of childhood depression.

- Antidepressant efficacy is questionable.
  - Few studies on most drugs.
  - Paroxetine contraindicated.
  - Only fluoxetine is FDA approved but effectiveness is unimpressive.
  - Large placebo effect suggests that drug-free treatments may be preferable.

### Suitability in Children and Adolescents

Antidepressants increase the risk of suicidal thinking and behavior (suitability) in children and adolescents with major depressive disorder (MDD) and other psychiatric disorders. Anyone considering the use of [Drug Name] or any other antidepressant in a child or adolescent must balance this risk with the clinical need. Patients who are started on therapy should be observed closely for clinical worsening, suicidality, or unusual changes in behavior. Families and caregivers should be advised of the need for close observation and communication with the prescriber. [Drug Name] is not approved for use in pediatric patients except for patients with [Any approved pediatric claims here]. (See Warnings and Precautions: Pediatric Use)

Pooled analyses of short-term (4 to 16 weeks) placebo-controlled trials of nine antidepressant drugs (SSRIs and others) in children and adolescents with MDD, obsessive compulsive disorder (OCD), or other psychiatric disorders (a total of 24 trials involving over 4400 patients) have revealed a greater risk of adverse events representing suicidal thinking or behavior (suitability) during the first few months of treatment in those receiving antidepressants. The average risk of such events on drug was 4%, twice the placebo risk of 2%. No suicides occurred in these trials.

October, 2004 – FDA requires pharmaceutical companies to publish “black box warning” about *suicidality* in adolescents treated with antidepressants.