Disclosures

I have no relevant financial relationships to disclose.
Objectives

Upon completion of this course, you will be able to

1) identify and diagnose the two most common mental illnesses in children

2) identify the two main classes of medications used to treat ADHD

3) dose, titrate, and monitor SSRIs as treatments of depression and anxiety
Most Common Mental Illnesses in Children

1. ADHD
2. Anxiety Disorders
3. Depression
“And this one is my Ritalin patch.”
National Survey of Children’s Health

- 11% prevalence = 6.4 million youth

- of these, 82.3% (= 5.1 million) are on medications

- ADHD prevalence increases to 13% when use DSM-V criteria
Diagnosing ADHD

• ADHD can be diagnosed by clinical interview.

• If using rating scales, consider the Vanderbilt.
Treating ADHD

• Therapy may be indicated to address organizational skills deficits or oppositional behaviors.

• treatment of choice = medications

• medications of choice = stimulants
Prior to initiating stimulants, check

- routine physical exam
- blood pressure
- pulse
- height
- weight
• Baseline EKGs are NOT recommended unless...
  – history of cardiac disease
  – symptoms suggestive of significant cardiac disease
  – family history of cardiac disease (sudden cardiac death at age <50, cardiomyopathy, arrhythmias, etc.)
Stimulants

• Contraindications to the use of stimulants:
  – glaucoma
  – symptomatic cardiovascular disease
  – hyperthyroidism
  – HTN
  – active psychosis
  – concomitant use of MAO-I
• Cautions in using stimulants:
  
  – If worried about substance use in the home, consider Vyvanse.
  
  – In general, longer-acting formulations are less subject to diversion.
Stimulant Side Effects

- Common side effects of stimulants:
  - decreased appetite
  - sleep disturbance
  - symptom rebound
  - irritability or tearfulness
  - tic exacerbation
  - psychosis/mania/severe depression
Decreased Appetite

- dose after meals
- frequent snacks
- drug holidays
- nutritional supplement
- last resort: cyproheptadine 4 or 8mg
Sleep Disturbance

- reduce afternoon dose
- move dosing regimen to earlier time
- eliminate caffeine
- limit evening screen time
- medications as a last resort
Sleep Disturbance: Medications

- melatonin: 1-9 mg
- clonidine: ≤ 0.2 mg
- trazodone: 25-100 mg
- antihistamine: acutely
Symptom Rebound

• try sustained-release stimulant

• add a small dose of short-acting in late-afternoon
Irritability or Tearfulness

- less common
- decrease dose
- try another medication
- consider co-morbid conditions
Exacerbation of Tics

• rare

• observe

• reduce dose

• re-try or try another medication
Psychosis/Mania/Severe Depression

- rare
- stop stimulant
- refer to mental health specialist
Stimulants

• methylphenidates

• amphetamines
General Dosing of Stimulants

“rule of thumb” maximum doses:

- methylphenidate – 2mg/kg/day
- dexamethylphenidate (Focalin) – 1mg/kg/day
- amphetamines (except Vyvanse) – 1mg/kg/day
- lisdexamphetamine (Vyvanse) – 1.5mg/kg/day
## Short-Acting Methylphenidates

<table>
<thead>
<tr>
<th>Name</th>
<th>Duration of Action</th>
<th>Forms</th>
<th>FDA Approval</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ritalin</td>
<td>3-4 hours</td>
<td>can be split</td>
<td>ages 6-12; adults</td>
<td></td>
</tr>
<tr>
<td>Focalin</td>
<td>3-4 hours</td>
<td>can be split</td>
<td>ages 6-17</td>
<td>use ½ the Ritalin dose</td>
</tr>
<tr>
<td>Metylin</td>
<td>3-4 hours</td>
<td>can be split</td>
<td>ages 6-12</td>
<td></td>
</tr>
<tr>
<td>Metylin CT</td>
<td>3-4 hours</td>
<td>can be split; chewable, grape-flavored</td>
<td>ages 6-12</td>
<td></td>
</tr>
<tr>
<td>Metylin Oral Solution</td>
<td>3-4 hours</td>
<td>clear, grape-flavored liquid</td>
<td>ages 6-12</td>
<td></td>
</tr>
</tbody>
</table>
# Intermediate-Acting Methylphenidates

<table>
<thead>
<tr>
<th>Name</th>
<th>Duration of Action</th>
<th>Forms</th>
<th>FDA Approval</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ritalin SR</td>
<td>4-8 hours</td>
<td>cannot be split</td>
<td>ages 6-12; adults</td>
<td></td>
</tr>
<tr>
<td>Metadata ER</td>
<td>4-8 hours</td>
<td>cannot be split</td>
<td>ages 6 and up</td>
<td></td>
</tr>
<tr>
<td>Methylin ER</td>
<td>4-8 hours</td>
<td>cannot be split</td>
<td>ages 6-12</td>
<td>possibly more continuous release than others</td>
</tr>
<tr>
<td>Metadata CD</td>
<td>8 hours</td>
<td>can sprinkle</td>
<td>ages 6-17</td>
<td>mimics BID dosing with two peaks</td>
</tr>
<tr>
<td>Ritalin LA</td>
<td>8 hours</td>
<td>can sprinkle</td>
<td>ages 6-12</td>
<td>mimics BID dosing with two peaks</td>
</tr>
</tbody>
</table>
# Long-Acting Methylphenidates

<table>
<thead>
<tr>
<th>Name</th>
<th>Duration of Action</th>
<th>Forms</th>
<th>FDA Approval</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concerta</td>
<td>12 hours</td>
<td>cannot be split</td>
<td>ages 6 and up</td>
<td>issues with generic formulations</td>
</tr>
<tr>
<td>Quillivant XR</td>
<td>up to 12 hours</td>
<td>NA</td>
<td>ages 6-12</td>
<td>only long-acting oral suspension; banana-flavored</td>
</tr>
<tr>
<td>Focalin XR</td>
<td>10-12 hours</td>
<td>can sprinkle</td>
<td>ages 6 and up</td>
<td>use ½ the Ritalin dose</td>
</tr>
<tr>
<td>Daytrana</td>
<td>12 hours (worn 9 hours)</td>
<td>NA; can cut the patch</td>
<td>ages 6 and up</td>
<td>takes 1 hour to take effect; skin irritation</td>
</tr>
<tr>
<td>Aptensio XR</td>
<td>up to 12 hours</td>
<td>can sprinkle (but don’t chew beads)</td>
<td>ages 6 and up</td>
<td>biphasic release</td>
</tr>
</tbody>
</table>
Methylphenidates

• recommended as the first choice for preschool-aged children based on the PATS study
<table>
<thead>
<tr>
<th>Name</th>
<th>Duration of Action</th>
<th>Form</th>
<th>FDA Approval</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Short-Acting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dexedrine</td>
<td>3-5 hours</td>
<td>can be split</td>
<td>ages 3-16</td>
<td></td>
</tr>
<tr>
<td>Dextrostat</td>
<td></td>
<td>can be split</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desoxyn</td>
<td></td>
<td>can be split</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ProCentra</td>
<td></td>
<td>oral solution</td>
<td></td>
<td>bubble gum-flavored</td>
</tr>
<tr>
<td><strong>Intermediate-Acting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adderall</td>
<td>4-6 hours</td>
<td>can be split</td>
<td>ages 3-12</td>
<td></td>
</tr>
<tr>
<td><strong>Long-Acting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dexedrine Spansules</td>
<td>8-12 hours</td>
<td>can sprinkle</td>
<td>ages 6-16</td>
<td></td>
</tr>
<tr>
<td>Adderall XR</td>
<td>8-12 hours</td>
<td>can sprinkle</td>
<td>ages 6 and up</td>
<td></td>
</tr>
<tr>
<td>Lisdexamfetamine (Vyvanse)</td>
<td>12 hours</td>
<td>cannot be split; can dissolve</td>
<td>ages 6 and up</td>
<td>no diversion</td>
</tr>
</tbody>
</table>
## Non-Stimulant Options

<table>
<thead>
<tr>
<th>Name</th>
<th>Dose</th>
<th>Duration of Action</th>
<th>Form</th>
<th>FDA Approval</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atomoxetine</td>
<td>10mg-100mg</td>
<td>24 hours</td>
<td>cannot be split</td>
<td>ages 6 and up</td>
<td>“black box” warning</td>
</tr>
<tr>
<td><strong>Alpha-Agonists</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clonidine</td>
<td>0.05-0.4mg</td>
<td>4-6 hours</td>
<td>can be split</td>
<td>--</td>
<td>sedation; must taper</td>
</tr>
<tr>
<td>Catapres-TTS</td>
<td>0.1-0.6mg</td>
<td>24 hours</td>
<td>cannot be split</td>
<td>--</td>
<td>apply every 7 days</td>
</tr>
<tr>
<td>(transdermal)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kapvay</td>
<td>0.1-0.4mg</td>
<td>12-18 hours</td>
<td>cannot be split</td>
<td>ages 6-17</td>
<td>only FDA-approved adjunctive treatment to stimulants</td>
</tr>
<tr>
<td>Guanfacine</td>
<td>0.5-4mg</td>
<td>6-8 hours</td>
<td>can be split</td>
<td>--</td>
<td>less sedating than clonidine; must taper</td>
</tr>
<tr>
<td>Intuniv</td>
<td>1-4mg?</td>
<td>24 hours</td>
<td>cannot be split</td>
<td>ages 6-17</td>
<td>avoid high-fat meal</td>
</tr>
</tbody>
</table>

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ANXIETY GIRL!

able to jump to the worst conclusion in a single bound!
Anxiety

• 6-20% of children and adolescents have some form of pediatric anxiety disorder

• F > M
Depression

- 2% of prepubertal children
- 4-8% of adolescents
- M:F::1:1 in childhood
- M:F::1:2 in adolescence
- cumulative incidence by age 18 = 20%
Diagnosing Depression/Anxiety

- Use clinical interview
- PHQ-9
- SCARED
Treating Depression and Anxiety

• Cognitive-Behavioral Therapy (CBT) should be the first-line treatment for both mild to moderate depression and anxiety.
• For severe cases, the recommendation is for CBT plus medications.
• SSRIs = the pharmacological treatment of choice for both
• Anxiety often requires higher doses and longer duration of treatment than depression.
Treatment Algorithm

1) Optimize first-choice SSRI.

2) If that doesn’t work, try another SSRI.

3) If that doesn’t work, try another class.
SSRIs

- Recommended monitoring:
  - monitor weekly for the first month (phone contact is sufficient)
  - biweekly for the next month
  - monthly
SSRIs

• FDA “black box” warning:

www.parentsmedguide.org
Potential Adverse Effects of SSRIs

• activation
• bipolar switch
• stomach upset
• platelet dysfunction
• appetite change
metabolized, in part, by the cytochrome P450 system and should be administered with caution when used with other medications metabolized via this pathway
Treatment Duration

• Continue for at least 6-12 months following symptom remission.

• CBT is a durable treatment.

• Depression is episodic, but anxiety tends to be more constitutional.
SSRI Discontinuation

• Doses should be tapered slowly while the patient is monitored for potential symptom recurrence.

• The exception to this is fluoxetine (Prozac).
<table>
<thead>
<tr>
<th>Name</th>
<th>Dose Range</th>
<th>Starting Dose/Titration</th>
<th>FDA Approval</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluoxetine (Prozac)</td>
<td>10-60mg</td>
<td>10-20mg; ↑ by 10-20mg</td>
<td>≥8yo for MDD</td>
<td>long half-life; more likely to cause activation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>≥7yo for OCD</td>
<td></td>
</tr>
<tr>
<td>Sertraline (Zoloft)</td>
<td>12.5-200mg</td>
<td>12.5-25mg; ↑ by 25-50mg</td>
<td>≥6yo for OCD</td>
<td>more likely to cause GI symptoms when initiated</td>
</tr>
<tr>
<td>Citalopram (Celexa)</td>
<td>10-40mg</td>
<td>10mg; ↑ by 10-20mg</td>
<td></td>
<td>risk of QTc prolongation at dose &gt;40mg</td>
</tr>
<tr>
<td>Escitalopram (Lexapro)</td>
<td>5-20mg</td>
<td>5-10mg; ↑ by 5-10mg</td>
<td>≥12yo for MDD</td>
<td>sedating; may cause QTc prolongation in overdose</td>
</tr>
<tr>
<td>Paroxetine (Paxil, Paxil CR, Pexeva)</td>
<td>10-60mg</td>
<td>10mg; ↑ by 10mg;</td>
<td></td>
<td>Avoid!</td>
</tr>
<tr>
<td>Fluvoxamine (Luvox, Luvox CR)</td>
<td>25-300mg in divided doses</td>
<td>25mg daily; ↑ by 25mg; divide dose at 100mg</td>
<td>≥8yo for OCD</td>
<td>used less often for depression, more for OCD</td>
</tr>
</tbody>
</table>
Additional Medications for Anxiety

• Beta-blockers may be used as second-line agents for specific phobias and performance anxiety.

• Benzodiazepines can be used during the initiation phase of SSRIs. They should then be tapered off.
Parent Resources

• National Alliance on Mental Illness (NAMI)
  – http://www.nami.org/Template.cfm?Section=ADHD&Template=/ContentManagement/ContentDisplay.cfm&ContentID=105610

• Children and Adults with AD/HD (CHADD)
  – http://www.chadd.org/
  – http://www.help4adhd.org/
References


- Birmaher, Boris; Brent, David. Practice Parameters for the Assessment and Treatment of Children and Adolescents with Depressive Disorders. JAACAP, 46:11, 1503-1526, 2007.


- www.nami.org
Contact Information

Rosa Kim, MD
(414) 266-2932

Physician Consultation and Referral: (800) 266-0366