SESSION G7

Overview of Child Psychopharmacology in Primary Care
Robert Hilt, MD, FAAP

Session Description:

This presentation will clarify what is known about the appropriate use of psychotropics for children, and will offer practical advice on their use that will increase confidence in this arena. We will focus on ADHD medications, antidepressants and anxiolytics as used for children and adolescents. We will also discuss antipsychotic side effects and monitoring requirements.

Learning Objectives:

Following my presentation, participants will be able to:
1. Select the most appropriate ADHD medication for a young patient.
2. Know when to utilize an antidepressant, and to select the most appropriate option for a young patient.
3. Discuss key medication monitoring required when using psychiatric medications with kids.
Overview of Child Psychopharmacology in Primary Care

Robert Hilt, MD, FAAP
Associate Professor of Child Psychiatry
University of Washington
Director Partnership Access Line and Med 2nd Opinion
10/10/14

Disclosure Statement

• I have no relevant financial relationships with the manufacturer(s) of any commercial product(s) and/or provider of commercial services discussed in this activity.

• I will be discussing non-FDA approved use of medications in this presentation, which will be so designated on these slides.

Common Categories used

• Stimulants
  ▫ For ADHD
• Selective Serotonin Reuptake Inhibitors (SSRI)
  ▫ For anxiety, depression
• Alpha-agonists
  ▫ For ADHD, some disruptive behaviors
• Antipsychotics
  ▫ For psychosis, bipolar, severe aggression

ADHD Diagnosis

• Symptoms before age 12
• 6 months duration minimum
• 2 or more settings
• Clinically significant impairment
• Not explained by other disorder
• 6 minimum symptoms of inattention or hyperactivity

Inattention Symptoms

• Lacks attention to detail/careless mistakes
• Difficulty sustaining attention
• Does not seem to listen when spoken to
• Poor follow through
• Difficulty with organization
• Avoids tasks requiring sustained mental effort
• Loses things
• Easily distracted
• Forgetful

Hyperactivity/Impulsivity Symptoms

• Blurs out answers before question completed
• Runs/climbs excessively (restless in adolescents)
• Difficulty staying in seat
• Difficulty engaging in quiet activities
• “On the go”
• Talks excessively
• Interrupts
• Difficulty awaiting turn
• Fidgets
Prevalence and Prognosis
- Prevalence 6-9% (2x boys)
- 90% will have symptoms persisting into adulthood.
- Long-term consequences of ADHD:
  - Higher rates of accidents, marital difficulties, antisocial and criminal behavior, and obesity
  - Lower household income attained

Comorbidities
- Language or Learning problem (25-35%)
- ODD (55-85%)
- Substance abuse (20-40%)
- Conduct (10-20%)
- Anxiety (33%)
- Tic disorder (50%)
- Mood disorders
- Sleep problems

Work-up
- Clinical diagnosis
  - In general, no testing or imaging is indicated
- Rating scales can help elicit symptoms
  - Vanderbilt ADHD Rating Scale
- Compare to peers
  - Young age = Inattention/hyperactivity
- Response to stimulants is not unique to ADHD
- Consider low cognitive ability or learning disability

Stimulants
- Methylphenidate
  - Ritalin, Methylin, Concerta, Metadate, Focalin
- Dextroamphetamine
  - Dexedrine, Dextrostat, Adderall, Vyvanse
- About 5% of school age children use stimulants

Stimulants—why so popular?
- Most effective medication treatment in child psychiatry
- Immediately effective, no build-up required
- 85% of children with ADHD will respond to stimulant treatments
- Generally more clinically effective than non-medication treatments

Stimulants for ADHD
- Can start with either a methylphenidate or an amphetamine product
  - Amphetamines FDA approved > or = 3 yo
  - Methylphenidates FDA approved > or = 6 yo
- Similar efficacy
- Side effects may be more pronounced with amphetamines
- Push a tolerated stimulant dose before switching
  - Usually effective by 0.5mg/kg amphetamine, or 1mg/kg methylphenidate
Suggested starting doses

- Elementary school age:
  - ~5mg BID or TID of methylphenidate
  - ~2.5mg BID of dextroamphetamine

- High school age:
  - ~10mg BID or TID of methylphenidate
  - ~5mg BID of dextroamphetamine

Immediate Release Stimulants

<table>
<thead>
<tr>
<th>Name</th>
<th>Duration of Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylphenidate (Ritalin, Methylin)</td>
<td>4-6 h</td>
</tr>
<tr>
<td>D-methylphenidate (Focalin) *2x potency of methylphenidate</td>
<td>4-6 h</td>
</tr>
<tr>
<td>Mixed amphetamine salts (Adderall)</td>
<td>4-6 h</td>
</tr>
<tr>
<td>Dextroamphetamine (Dextrostat, Dexedrine)</td>
<td>4-6 h</td>
</tr>
</tbody>
</table>

Long Acting Stimulants

<table>
<thead>
<tr>
<th>Name</th>
<th>Mode of Delivery</th>
<th>Duration of Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ritalin SR, Metadate ER, Methylin ER</td>
<td>Gradual release wax matrix</td>
<td>4-8 h</td>
</tr>
<tr>
<td>Metadate CD</td>
<td>50% IR, 50% ~3 h later</td>
<td>3-6 h</td>
</tr>
<tr>
<td>Ritalin LA</td>
<td>50% IR, 50% ~4 h later</td>
<td>5 h</td>
</tr>
<tr>
<td>Focalin XR</td>
<td>50% IR, 50% ~4 h later</td>
<td>Up to 12 h</td>
</tr>
<tr>
<td>Concerta</td>
<td>22% IR, pump</td>
<td>Up to 12 h</td>
</tr>
<tr>
<td>Daytrana patch</td>
<td>Gradual release</td>
<td>3/5 h after removal</td>
</tr>
<tr>
<td>Adderall XR</td>
<td>50% IR, 50% ~4 h later</td>
<td>8-12 h</td>
</tr>
<tr>
<td>Dexedrine spansule</td>
<td>50% IR, 50% gradual</td>
<td>10 h</td>
</tr>
<tr>
<td>Vyvanse</td>
<td>Activated in GI tract</td>
<td>10 h</td>
</tr>
</tbody>
</table>

Common Stimulant Side Effects

- Decreased appetite, weight loss
- Nausea
- Insomnia
- Headaches
- Stomach aches
- Dry mouth
- Dizziness
- 30% don’t respond/can’t tolerate 1st trial
  - another stimulant helps over ½ of non-responders
  - 1st degree relative’s response?

Dealing With Common Side Effects

- If a good response, could work around common side effects
  - Rebound
    - longer acting doses or small PM short acting?
  - Appetite suppression
    - big breakfast/dinner or weekends off?
  - Insomnia
    - change to wear off earlier, or treat?
  - Dysphoria, Irritability
    - change preparation?

Unique Stimulant Concerns

- Tics
  - Historical “contraindication” but not now
  - Some tics ↑, some tics ↓, usually no change

- Height loss
  - Data is mixed on if this happens
  - If it actually occurs, may be up to max of one inch
Stimulants and Drug Abuse

- ADHD itself increases risk of substance abuse
- Stimulant diversion is commonplace
  - ~20% of high school kids divert doses
- Avoid use for known substance abusers
  - Consider longer-acting formulations or non-stimulants

Stimulants and the Heart

- Stimulants can increase BP (2-4 mm Hg) and pulse (3-6 BPM)
  - theoretically increases exercise risks
  - Atomoxetine does the same thing
  - “Outlier” responses, worth checking BP/pulse
- Consider ECG when on high dose, combined medications, significant BP/pulse change, or cardiac symptoms
- May be 2 fold increased long term chance of cardiac “events” among users

If stimulant treatment fails

- Think comorbidity
- Re-evaluate the ADHD diagnosis
- Consider an increased role for behavior therapy and/or alternative medications

Atomoxetine (Strattera)

- Noradrenergic reuptake inhibitor
- Start at 0.5 mg/kg/day for 2 weeks. Increase to 1.2 mg/kg/day.
- Maximum 100 mg or 1.4 mg/kg (whichever is less).
- Consider if
  - Family opposed to stimulants
  - Substance abuse history
  - Late evening behavior problems
  - Stimulants don’t work

Atomoxetine

- Trivia: Is a failed antidepressant from the 1980’s
- Effect size 0.6 (similar to guanfacine)
  - For comparison, effect size of stimulants approximately 0.9-1.0
  - For reference, effect size 0.2 is considered small, 0.6 is moderate, and 0.8 is large.

Bimodal Atomoxetine Response

- Much improved responders (N=279)
- Much improved responders (N=318)

Newcorn et al. 2009

Decrease in ADHD-RS score

Time (weeks)
Atomoxetine Side Effects

- headache (about 1 in 5)
- abdominal pain/nausea (about 1 in 7)
- decreased appetite, weight loss (in 7-30%)
- somnolence (about 1 in 10)
- Blood pressure & Pulse elevation (in 4-5%)
- Liver injury (rare, but severe) – discontinue if signs of hepatic injury and do not restart
- Risk of sudden cardiac death (rare)

Alpha2 Agonists

- Clonidine (Kapvay, Catapres)
- Guanfacine (Intuniv, Tenex)
  - Blood pressure suppressants (mild)
  - Mild/moderate ADHD benefit
  - May help some PTSD symptoms
  - May tone down Oppositional Defiant Disorder

Alpha2 agonists

- May be more effective for hyperactivity than inattention
- Soporific effect may wane after 2-3 weeks
- May not see full benefit for 4-6 weeks
- Sedation, dizziness, hypotension, bradycardia
- Review personal and family cardiac history
- Review risk of rebound hypertension

Guanfacine

<table>
<thead>
<tr>
<th></th>
<th>Starting dose</th>
<th>Maximum dose</th>
<th>Half life</th>
<th>FDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guanfacine</td>
<td>&lt;45kg, 0.5 mg</td>
<td>2 mg (27-40 kg)</td>
<td>14 h</td>
<td>Not approved</td>
</tr>
<tr>
<td></td>
<td>&gt;45 kg, 1 mg</td>
<td>3 mg (40-45 kg), 4 mg (&gt;45 kg)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guanfacine extended release (Intuniv)</td>
<td>1 mg daily</td>
<td>4 mg</td>
<td>16 h</td>
<td>Approved 6-17yo</td>
</tr>
</tbody>
</table>

Wait one week between dose increases.

Clonidine

<table>
<thead>
<tr>
<th></th>
<th>Starting dose</th>
<th>Maximum dose</th>
<th>Half life</th>
<th>FDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clonidine</td>
<td>&lt;45kg, 0.05 mg</td>
<td>0.2 mg (27-40 kg), 0.3 mg (40-45 kg), 0.4 mg (&gt;45 kg)</td>
<td>12 h</td>
<td>Not approved</td>
</tr>
<tr>
<td>Clonidine extended release (Kapvay)</td>
<td>0.1 mg qhs, doses greater than 0.1 mg should be bid</td>
<td>0.4 mg</td>
<td>12-16 h</td>
<td>Approved 6-17yo</td>
</tr>
</tbody>
</table>

Wait one week between dose increases.

XR forms really are “reduced peak”

http://www.kapvay.com/Kapvay_final_09.28.10.pdf

Prescribing information.
When I Consider α2-Agonists for ADHD

- Stimulants don’t work/not tolerated
- Want to generate a sedative effect
- Want to treat co-morbid tics
- Cardiac concerns or substance abuse that contraindicate stimulants
- Partial stimulant benefits, so use as add on treatment (now FDA approved)

Bupropion

- Brand name: Wellbutrin
- Not FDA approved for pediatric use
- Combined dopaminergic/noradrenergic mechanism of action
- Some reports of ADHD benefits
- Consider when
  - primary treatments have failed, co-occurring mood disorder, substance abuse, or smoking.

Bupropion

- Side effects:
  - irritability, insomnia, appetite decrease, less commonly tics, seizures
  - Often not well tolerated
- Risk of drug induced seizures increases 10x at doses > 450 mg/day

Omega 3 fatty acid

- Not FDA approved.
- Meta-analysis 699 patients
  - Small but significant effect (effect size 0.31)
- Could augment other interventions, or for families that decline other options
- Practical challenge in getting young kids to reliably take fish oil pills

SSRI Medications

- Fluoxetine (Prozac)
- Sertraline (Zoloft)
- Citalopram (Celexa)
- Escitalopram (Lexapro)
- Fluvoxamine (Luvox)
- Paroxetine (Paxil)

Positive Adolescent Depression Trials

<table>
<thead>
<tr>
<th>SSRI</th>
<th>Response rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>fluoxetine</td>
<td>52-61% vs. placebo 33-37%</td>
</tr>
<tr>
<td>sertraline</td>
<td>63% vs. placebo 53%</td>
</tr>
<tr>
<td>citalopram*</td>
<td>47% vs. placebo 45%</td>
</tr>
<tr>
<td>escitalopram</td>
<td>64% vs. placebo 53%</td>
</tr>
</tbody>
</table>

*Note the CGI was not the primary outcome variable for this trial.
Understanding Depression Trials

- High placebo response rates
  - "placebo" is not equivalent to "no treatment"
- Spontaneous remission for mild depression
  - exclude the severely depressed in "pharma" trials
- Only 1 non-pharmaceutical industry sponsored depression study published on kids

TADS—Treatment of Adolescent Depression Study

- 439 adolescents
- 12 week treatment
- Moderate to severe depression
  - ~30% with suicidality
- More than half had comorbid psychiatric illness
- Randomized to:
  - fluoxetine
  - fluoxetine plus CBT
  - CBT alone
  - placebo

TADS Results

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Response Rate (CGI ≤2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluoxetine plus CBT</td>
<td>73%</td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>62%</td>
</tr>
<tr>
<td>CBT</td>
<td>48%</td>
</tr>
<tr>
<td>Placebo</td>
<td>35%</td>
</tr>
</tbody>
</table>

- Suicidal “events” decreased with all active treatments
  - At 36 week follow up more common with fluoxetine alone (14%) than Combination (8%), or CBT (6%)

But Aren’t SSRI’s Dangerous?

- FDA Black Box in 2004 warned of suicidality 2x greater on med versus on placebo

SSRIs and suicidality

<table>
<thead>
<tr>
<th>Drug</th>
<th>Risk Ratio</th>
<th>95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venlafaxine</td>
<td>RR 8.8</td>
<td>(1.1-70)</td>
</tr>
<tr>
<td>Sertraline</td>
<td>RR 2.2</td>
<td>(0.48-9.6)</td>
</tr>
<tr>
<td>Paroxetine</td>
<td>RR 2.2</td>
<td>(0.7-6.5)</td>
</tr>
<tr>
<td>Mirtazapine</td>
<td>RR 1.6</td>
<td>(0.06-38)</td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>RR 1.5</td>
<td>(0.7-3.2)</td>
</tr>
<tr>
<td>Citalopram</td>
<td>RR 1.4</td>
<td>(0.5-3.5)</td>
</tr>
</tbody>
</table>

Overall Black Box warning states about 2-fold increase for the class

T Hammad, T Laughren, J Racoosin 2006
But, No Smoking Gun

- Population studies in Sweden, Italy, Europe, Australia, and U.S. all show decreased youth suicide rates with increasing antidepressant use
- Completed suicide reviews show little association with SSRI use

How To Make Sense of SSRI Suicidality?

- Agitation long known to be an SSRI effect for many who take them
- Agitation + mood/anxiety disorder = suicidality?
  - High dose starts in adults associated with SI
  - Energy improving = more suicidal motivation?
- Risk/benefit analysis clearly favors SSRI use for moderate to severe depression
  - Less clear for mild depression

Medicating Major Depression

- First line medication option is:
  - Fluoxetine (Prozac)
- Second line medication options are:
  - Sertraline (Zoloft)*
  - Citalopram (Celexa)*/escitalopram (Lexapro)
- Screen for agitation/SI within 2 weeks
- Wait 4-6 weeks to see what dose will do
- If fails, try a second SSRI
- If second trial fails, less certain what comes next

* not FDA approved

What About the Rest?

- SNRI
  - Venlafaxine (Effexor)
  - Duloxetine (Cymbalta)
- TCA
  - amitriptyline, nortriptyline, imipramine
- Unique agents
  - Bupropion (Wellbutrin)
  - Trazodone (Desyrel)

SSRI’s for Anxiety

- Actually are more effective in child anxiety than for depression
- Great data about them helping for OCD, GAD
  - Less info about other anxiety problems
- 1st line choices based on the anxiety RCT evidence
  - sertraline or fluoxetine

Childhood Anxiety (CAMS)

- Multisite RCT, funded by the NIMH
  - separation anxiety
  - generalized anxiety
  - social phobia
- 488 children between the ages of 7-17
  - 14 sessions of CBT (Coping Cat)
  - Sertraline
    (average final dose by week 8 was 125-150mg/day)
  - Combination treatment
  - Placebo
CAMS Results:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>% of Responders (CGI)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBT plus Sertraline</td>
<td>81%</td>
</tr>
<tr>
<td>CBT</td>
<td>60%</td>
</tr>
<tr>
<td>Sertraline</td>
<td>55%</td>
</tr>
<tr>
<td>Placebo</td>
<td>24%</td>
</tr>
</tbody>
</table>

*S much or very much improved on CGI

Suggested SSRI Dosages

<table>
<thead>
<tr>
<th>Medication</th>
<th>Usual Adolescent Starting Dose</th>
<th>Increase Increment (after 4 - 6 weeks)</th>
<th>Max Dosage</th>
<th>Youth RCT benefits</th>
<th>Youth FDA Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluoxetine</td>
<td>10mg/day</td>
<td>10-20mg</td>
<td>60mg</td>
<td>Yes</td>
<td>MDD, OCD</td>
</tr>
<tr>
<td>Sertraline</td>
<td>25-50mg/day</td>
<td>25-50mg</td>
<td>200mg</td>
<td>Yes</td>
<td>OCD</td>
</tr>
<tr>
<td>Escitalopram</td>
<td>5mg/day</td>
<td>5-10mg</td>
<td>20mg</td>
<td>Yes</td>
<td>MDD</td>
</tr>
<tr>
<td>Citalopram</td>
<td>10mg/day</td>
<td>10-20mg</td>
<td>40mg</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

--If a pre-adolescent, would decrease these dosages by ~ 1/3rd to 1/2

Other Anxiety Medications

- Bupirone
  - open label studies suggest may have a role
- Beta Blockers (like propranolol)
  - unique indication with performance anxiety
- Antihistamines (like Benadryl)
  - hydroxyzine approved anxiety tx. in adults
  - use for short term insomnia, anticipatory anxiety
- Benzodiazepines (lorazepam, diazepam, clonazepam)
  - Abuse and psychological dependence, so I try to avoid them

Monitoring Outcomes

- Rating Scale Role
  - Depression
  - PHQ-9
  - Anxiety
  - SCARED
  - ADHD
  - Vanderbilt ADHD Rating Scale

Antipsychotics

- Ideal world: mental health specialists could handle all prescribing of these
- Real world: primary care pressured to originate or continue these meds

Other Meds...
Antipsychotics- What do we really know?

• Treat psychosis*, but also benefits in:
  ▫ Mania/bipolar disorder*
  ▫ Tic and Tourette’s disorder
  ▫ Irritability associated with autism*
  ▫ Severe oppositional defiant disorder
  ▫ Impulsive aggression of conduct disorder
  ▫ Explosive affect & impulsive aggression

*FDA approvals

Antipsychotics (1st Generation)

• Chlorpromazine (Thorazine)
• Fluphenazine (Prolixin)
• Haloperidol (Haldol)
• Perphenazine (Trilafon)
• Thioridazine (Mellaril)
• Thiothixene (Navane)

* Generally not being used now in kids due to extrapyramidal symptoms

Atypical Antipsychotics (2nd gen.)

• Aripiprazole (Abilify)
• Olanzapine (Zyprexa)
• Quetiapine (Seroquel)
• Risperidone (Risperdal, Invega)
• Ziprasidone (Geodon)
  ▫ Asenapine (Saphris)
  ▫ Clozapine (Clozaril, FazaClo)
  ▫ Lurasidone (Latuda)
  ▫ Iloperidone (Fanapt)

Atypical Antipsychotic Monitoring

<table>
<thead>
<tr>
<th>Monitoring recommendation</th>
<th>Frequency Suggestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height and weight</td>
<td>At baseline and at each follow-up (at least every 6 months)</td>
</tr>
<tr>
<td>Vital signs</td>
<td>At least every 5 months</td>
</tr>
<tr>
<td>CBC (without Diff)</td>
<td>At least 6 months</td>
</tr>
<tr>
<td>CBC with Diff</td>
<td>Once to catch if any suppression, a few months after initiation</td>
</tr>
<tr>
<td>QT/Pulse</td>
<td>At least once after starting medication</td>
</tr>
<tr>
<td>Cardiac history</td>
<td>At baseline, get echo if in doubt about risk from a mild QT increase</td>
</tr>
</tbody>
</table>

Atypical Antipsychotic Risks

<table>
<thead>
<tr>
<th>Common Side Effects</th>
<th>Less Common Side Effects</th>
<th>Notable Rare Reactions (&gt;2%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight gain</td>
<td>Tremors</td>
<td>Tardive Dyskinesia</td>
</tr>
<tr>
<td>Muscle rigidity</td>
<td>Nausea or abdominal pain</td>
<td>Neuroleptic Malignant</td>
</tr>
<tr>
<td>Parkinsonism</td>
<td>Akathisia (restlessness)</td>
<td>Syndrome</td>
</tr>
<tr>
<td>Constipation</td>
<td>Headache</td>
<td>Lowered blood cell counts</td>
</tr>
<tr>
<td>Dry mouth</td>
<td>Orthostasis</td>
<td>Elevated liver enzymes</td>
</tr>
<tr>
<td>Dizziness</td>
<td>Elevated glucose</td>
<td>Prolonged QT interval</td>
</tr>
<tr>
<td>Somnolence/fatigue</td>
<td>Elevated cholesterol/triglycerides</td>
<td>Tachycardia</td>
</tr>
</tbody>
</table>

From Hilt R, 2012

Risperidone (Risperdal)

• ½ life 20 hours
• available liquid, dissolving tab, tabs, depot
• doses over 6mg per day behave like 1st generation antipsychotic in adults
• for aggression treatment, usually don’t need doses greater than 2mg
• TD incidence reported less than 0.5%
• The usual 1st line choice antipsychotic
  ▫ Relatively predictable benefits
  ▫ Lots of research in kids

From Hilt R, 2012
Quetiapine (Seroquel)
• ½ life 6 hours
• some prescribe just as sleep aide
  ▫ Please don’t do this! Risking permanent TD from a childhood sleep aide is not reasonable
• lower potency, may be experienced as “milder”
• Less consistent benefits on aggression, bipolar, schizophrenia unless using high doses

Aripiprazole (Abilify)
• ½ life 75 hours
• Pills, IM form available
• Novel: mixed agonist/antagonist
  ▫ Often takes much longer to see benefits
  ▫ some get agitation because of the med
• Reputation as weight neutral—not true in kids
• If need to help right away, not my preferred choice
• Much more hit-or-miss than the other antipsychotics

Lithium (Lithobid, Eskalith)
• Antimanic, antipsychotic, antidepressant activity
• Narrow therapeutic index
  ▫ Blood level monitoring
  ▫ Don’t combine with NSAIDS
  ▫ Avoid dehydration
  ▫ Small fetal toxicity risk
• How well does it work?
  ▫ Hit or miss, can be uniquely helpful
  ▫ Anti-suicide reports

Valproic Acid* (Depakote)
• Possible uses with aggression, bipolar
• How well does it work?
  ▫ so-so; usually works best in adolescents in combination with an antipsychotic
• Monitoring
  ▫ Blood tests
  ▫ weight gain
  ▫ sedation
  ▫ fetal toxicity risk with adolescent girls
* not FDA approved for child mental health

Oxcarbazepine* (Trileptal)
• Related to carbamazepine
• Less risks than Carbamazepine
  ▫ less liver/blood toxicity, so often no blood tests
• Weight neutral
• 2006 study by Wagner K et al. found it doesn’t work for child bipolar
  ▫ Very commonly used for this anyway
* not FDA approved for child mental health

Lamotrigine* (Lamictal)
• Unique anticonvulsant
• Can reduce bipolar relapse
• Not so helpful for acute treatment
• Significant rash risk
• Slow titration (takes 2 months to reach full dose)
• Problem if forgetting to use daily
  ▫ An issue for adolescents
* not FDA approved for child mental health
Reminder: Medications will not resolve...

- Family stress/conflict
- Abuse/neglect
- Poor parenting strategies
- School stress/conflict
- Strong willed temperament
- Intellectual deficits
- Developmental impairments

Questions?

Robert.hilt@seattlechildrens.org