Beyond ADHD and Stimulants: What You Need to Know about Psychiatric Medications in the School Setting

**School Nurse Conference Challenges and Changes in Today's School Nursing**

**San Anselm College**

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**Susan Smiga, MD**

Associate Clinical Professor Departments of Pediatrics and Psychiatry, Geisel School of Medicine at Dartmouth

**Goals for Today**

- Understand the context for using medication in the treatment of childhood disorders
- Be familiar with the most common medications used in the treatment of non-ADHD childhood psychiatric disorders
- Recognize the most common side effects of these medications
- Utilize common assessment strategies for monitoring children on these medications

**Understanding Each Child's Story: The Four P's**

- **Predisposing factors**
  - Chronic health problems
  - Neurologic insults
  - Genetics
  - Temperament
  - Poverty
  - Abuse/neglect
  - Death of a parent
- **Precipitating factors**
  - Trauma
  - Stress
  - Psychosocial
  - Interpersonal
  - Intrapersonal
- **Perpetuating factors**
- **Protective factors**
  - Intelligence
  - Competence
  - Connection
  - [http://www.fosteringresilience.com/7cs.php](http://www.fosteringresilience.com/7cs.php)

**EcoMapping**

**Did You Know.....?**

HALF OF ALL ADULTS WITH MENTAL ILLNESS REPORT ONSET OF SYMPTOMS BEFORE AGE 14 YEARS

**Making a Diagnosis?**

- **Assessment**
  - Multi-informant
  - Symptom domains
  - Functional status
- **DSM-5**
  - Categorical, criteria based
- **DSM-PC**
  - Dimensional, based on “real-life”
**Treatment Selection**

- **Biological**
  - Medications target symptoms that cause impairment

- **Psychological**
  - Therapy
    - Individual, group, family, school-based
  - Type: CBT, IPT, DBT, TF-CBT, CPP

- **Social**
  - Parenting support
  - In-home supports, respite
  - Activity based

**Medication Selection**

- **Internalizing symptoms**
  - Anxiety
  - Depression

- **Externalizing symptoms**
  - ADHD
  - Bipolar Disorder

- **Comorbidities**
  - Psychiatric disorders
  - Substance use
  - Medical/neurological

**Anxiety Disorders**

- **Most common disorder of childhood**
  - 10-20% of kids in US meet criteria
  - 50-70% comorbid, most commonly with depression

- **Temperament**
- Genetics
- Environmental
  - Stress
  - Trauma
- Learned

**What is Normal (and Not)?**

- **Age, Persistence, Severity, Interference**
- **Normal developmental fears**
  - Birth-6 months: loud noises, loss of physical support, rapidly approaching objects, unfamiliar objects
  - 7-12 months: sudden confrontation, unfamiliar people, unexpected objects
  - 1-5 years: strangers, storms, animals, dark, separation, machines, monsters, insects, bodily harm
  - 6-12 years: supernatural, bodily injury/illness, intruders, being alone, punishment, failure
  - 12-18 years: school performance, bodily injury, appearance, body image, scrutiny

**What are the Anxiety Disorders?**

- Generalized Anxiety
- Social Anxiety
- Separation Anxiety
- Selective Mutism
- Specific Phobia
- Panic
- OCD
- PTSD
### Treatment for Anxiety

<table>
<thead>
<tr>
<th>Non-Med</th>
<th>Medication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psycho-education</td>
<td>Anxiety specific</td>
</tr>
<tr>
<td>CBT</td>
<td>Broad “Spectrum” agents</td>
</tr>
<tr>
<td>Family</td>
<td>Best in combination with therapy</td>
</tr>
<tr>
<td>Play</td>
<td>EXPOSURE is KEY</td>
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</tbody>
</table>

### Anxiety Specific Medications

- **Benzodiazepines**
  - Lorazepam (Ativan), clonazepam (Klonipin)
  - May cause paradoxical response in children
  - Can make sleepy or loopy
  - Can lead to dependence and/or diverted

- **Non-benzodiazepine anxiolytics**
  - Buspirone (Buspar) FDA approved for adults, GAD; Non-FDA approved for children or teens
  - Hydroxyzine (Atarax) FDA approved for children for anxiety age ≥ 6 years or younger

### “Broad” Spectrum “Anti-Anxiety”

- **Classic tricyclic “antidepressants”**
  - Imipramine, desipramine, amitriptyline, nortriptyline,
  - Clomipramine OCD specific
- **2nd generation**
  - Selective Serotonin Reuptake Inhibitors (SSRI)
- **3rd generation**
  - Serotonin-Norepinephrine Reuptake Inhibitors (SNRI)
  - Venlafaxine (Effexor), Duloxetine (Cymbalta), mirtazapine (Remeron)

### “Broad” Spectrum Anti-Anxiety

- **Miscellaneous agents**
  - Alpha-2-Agonists
    - Guanfacine (Tenex/Intuniv), clonidine (Catapres/Kapvay)
  - Beta Blockers
    - Propranolol (Inderal) Non-FDA approved for anxiety

### SSRIs

- Most commonly prescribed medication for childhood anxiety
- Generally Safe and well-tolerated
- Some FDA labeled for use in children
  - Fluoxetine (Prozac) OCD ≥ 7 years; 10-60mg
  - Sertaline (Zoloft) OCD ≥ 6 years; 25-200mg
  - Fluvoxamine (Lavox) OCD ≥ 8 years; 25-300mg
  - Escitalopram (Lexapro) MDD ≥ 12; 10-20mg
- Some not FDA labeled for use in children
  - Citalopram (Celexa) Not approved
  - Paroxetine (Paxil) Not approved

### SNRIs

- NONE approved for use in children or teens
- Venlafaxine (Effexor IR, XL)
  - GAD, panic, social anxiety, MDD
  - Chronic pain
  - Discontinuation syndrome
- Duloxetine (Cymbalta)
  - GAD, MDD
  - Chronic pain
### What Does the Data Say?

- Majority of anxiety disorders remit (~80%)
- HOWEVER 1/3 develop new disorders (most often depression or different anxiety disorder)
- GAD greatest risk
- OCD and PTSD may be unique
- Treatment with SSRI improves outcomes by about 1/3 as compared to placebo

### Depression

- Pre-pubertal rates lower
- Increases with puberty
- Gender ratio changes - relative increase in girls
- Childhood onset poorer prognosis
- Suicide 2nd-3rd leading cause of death for teens
- Irritability may be presenting mood in children
- MDE contributes to long-term impairment
- Remitting and episodic disorder

### Depressive Disorders

- Major Depression
  - Must have depressed mood and/or anhedonia
- Dysthymia
  - One year duration for children
- Double depression
- Adjustment disorder with depressed mood
- Complicated bereavement
- Depression NOS

### Treatment for Depression

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<tr>
<td>Family</td>
<td>Augmentation</td>
</tr>
<tr>
<td>Play</td>
<td>CBT best evidence</td>
</tr>
<tr>
<td></td>
<td>Meds BEST in COMBINATION with THERAPY</td>
</tr>
</tbody>
</table>

### Depression Specific Medications

- Classic tricyclic “antidepressants”
  - Imipramine, desipramine, amitriptyline, nortriptyline
- 2nd generation
  - Selective Serotonin Reuptake Inhibitors (SSRI)
- 3rd generation
  - Serotonin-Norepinephrine Reuptake Inhibitors (SNRI)
    - Mirtazapine (Remeron) weight gain

### “Broad” Spectrum Anti-Depressants

- SNRI
  - Venlafaxine, duloxetine
- Wellbutrin
  - On label depression for children age ≥ 6 years; off label ADHD
- Lithium
  - BAD, age ≥ 12 years, off label BAD age ≥ 6 years and MDD
  - Suicide “protection”
  - Labs required, thyroid, kidney, levels
  - Narrow therapeutic window
  - Neurological and gastrointestinal
Diagnoses Associated with Specific Antidepressants

Augmentation Strategies
- Thyroid hormone
- Buspirone
- Wellbutrin
- Atypical antipsychotic
- Lithium

SSRIs
- Most commonly prescribed medication for childhood depression
- Generally Safe and well-tolerated
- Only one FDA labeled for use in children FOR MDD
  - Fluoxetine (Prozac) OCD ≥ 7 years; 10-60mg
  - Sertraline (Zoloft) OCD ≥ 6 years; 25-200mg
  - Fluvoxamine (Luvox) OCD ≥ 8 years; 25-300mg
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Serotonin System

ONSET OF ACTION

What Does the Data Say?
- Majority of depressive episodes remit within 7-9 months
- Increased risk for recurrence with each additional episode
- Treatment with SSRI improves outcomes as compared to placebo
What About the Black-Box Warning?

The Good News....

- At population level...
  - Increase SSRI use linked with decreased suicide rate in depressed children (each 1% increase in use, decrease of 0.23 suicides/100,000 adolescents)

SSRI Side Effects

<table>
<thead>
<tr>
<th>Common</th>
<th>Less Common</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>SSRI discontinuation</td>
</tr>
<tr>
<td>GI</td>
<td>Serotonin syndrome</td>
</tr>
<tr>
<td>Somnolence or insomnia</td>
<td>Induction of mania</td>
</tr>
<tr>
<td>Activation/agitation</td>
<td>Akathesia</td>
</tr>
<tr>
<td>Sexual dysfunction</td>
<td></td>
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“Mood Disorders”

- Disruptive Mood Dysphoria Disorder
- Bipolar Disorder
- Intermittent Explosive Disorder
- Disruptive Behavior Disorder, NOS

Mood Stabilizers

- Lithium
- Anticonvulsants or anti-epileptic drugs
  - Valproic acid (Depakote)
  - Carbamazepine (Tegretol) and oxcarbamazepine (Trileptal)
  - Topiramate (Topamax)
  - Lamotrigine (Lamictal)
- Atypical antipsychotics
  - Risperidone (Risperidal)
  - Aripiprazole (Abilify)
  - Quetiapine (Seroquel)
  - Olanzapine (Zyprexa)
  - Ziprasidone (Geodon)

Lithium
Atypical “Antipsychotics”

- **Aripiprazole**
  - BAD age ≥ 10 years, schizophrenia ≥ 13 years, MDD, ASD
- **Olanzapine**
  - BAD and MDD; not approved for children under 13 years
- **Risperidone**
  - BAD age ≥ 10 years, off label ODD age ≥ 5 years, TD ≥ 7 years; schizophrenia age ≥ 13 years, ASD
- **Quetiapine**
  - BAD age ≥ 10 years, schizophrenia age ≥ 13 years
- **Ziprasidone**
  - BAD, TD off label age ≥ 7 years, otherwise not approved for children or teens

“Atypical” Antipsychotics

- **Diverse use**
  - Mood disorders
  - Autism
  - Psychosis and psychotic disorders
  - Aggression
  - Severe anxiety
  - Severe PTSD
  - Tic Disorders and Tourettes

Atypical’s Side Effect Profiles

<table>
<thead>
<tr>
<th>General for class</th>
<th>Agent specific</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Common</strong></td>
<td><strong>Risperidone</strong></td>
</tr>
<tr>
<td>○ Sedation</td>
<td>○ Elevated prolactin</td>
</tr>
<tr>
<td>○ Increased appetite and weight gain</td>
<td>○ <strong>Cardiac conduction</strong></td>
</tr>
<tr>
<td>○ Ziprasidone</td>
<td>○ <strong>Ziprasidone</strong></td>
</tr>
<tr>
<td><strong>Uncommon</strong></td>
<td><strong>Risperidone</strong></td>
</tr>
<tr>
<td>○ Drooling</td>
<td>○ Elevated prolactin</td>
</tr>
<tr>
<td>○ Enuresis</td>
<td>○ <strong>Cardiac conduction</strong></td>
</tr>
<tr>
<td>○ Motor dyskinesias</td>
<td>○ <strong>Ziprasidone</strong></td>
</tr>
<tr>
<td>○ Metabolic syndrome</td>
<td>○ <strong>Ziprasidone</strong></td>
</tr>
<tr>
<td>○ NMS</td>
<td>○ <strong>ECG</strong></td>
</tr>
</tbody>
</table>

Monitoring on Atypicals

- **Metabolic syndrome**
  - Fasting glucose, lipid panel, HgbA1C
- **Neurological**
  - AIMS
- **Liver function**
- **Risperidone specific**
  - Prolactin
- **Ziprasidone specific**
  - ECG

Anti-Epileptic Drugs (AED)

- **Primary indication for all are seizures**
  - Valproic acid and divalprox (Depakote)
    - Requires labs
  - Carbamazepine (Tegretol)
    - Requires labs
  - Oxcarbamazepine (Trileptal)
  - Topiramate (Topamax)
    - Cognitive issues
  - Lamotrigine (Lamictal)
  - Gabapentin (Neurontin)

Schizophrenia

- **Typical antipsychotics**
  - Haloperidol (Haldol)
    - On label ADHD, ODD, TD, off label ASD; age 3 ≥ year
  - Chlorpromazine (Thorazine)
  - Perphenazine (Trilafon)
  - Molindone (Moban)
  - Loxapine (Loxitan)
- **Additional atypical antipsychotics**
  - Paliperidone (Invega); age ≥ 12 years, schizophrenia; AIMS
  - Lurasidone (Latuda), not approved for children or teens, AIMS, weight
### Autism Spectrum Disorder

- **No specific pharmacological treatment**
- **Targets**
  - Anxiety
  - OCD rigidity, preoccupations
  - Stereotypies
  - ADHD
  - Aggression
  - Irritability
  - Sleep
- **Atypical may be more effective than usual agents**
  - Risperidone and aripiprazole FDA approved age ≥ 5 years

### Sleep Problems

- **Insomnia**
- **Mid-Cycle awakening**
- **EMA**
- **Parasomnias**
  - Sleepwalking
  - Sleep terrors
  - Nightmares
- **Reversed sleep cycle**

### Sleep Agents

- **Approved for use in children age ≥ 6 years**
  - Hydroxyzine (Atarax) off label insomnia; on label itching for children Clonidine (Catapres) On label ADHD, off label TD, age ≥ 6 years
  - Diphenhydramine (Benadryl) age ≥ 6 years
  - Cyproheptadine (Periactin) off label anorexia; ages ≥ 2 years
- **Off Label for children**
  - Melatonin insomnia, off label in children
  - Trazodone (Desyrel) depression, anxiety; off label insomnia adult only
  - Prazosin (Minipress) off label for PTSD adults
  - Mirtazapine (Remeron) at low doses, off label

### “Appetite” Management

- **Decrease appetite**
  - Prazosin
- **Increase appetite**
  - Cyproheptadine

### Context for Prescribing

<table>
<thead>
<tr>
<th>Psychiatric disorders</th>
<th>Treatment</th>
</tr>
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<tbody>
<tr>
<td>Affect “whole” life</td>
<td>“As little as possible and as much as necessary”</td>
</tr>
<tr>
<td>Disabling for patient and family</td>
<td>Identify and treat comorbidities</td>
</tr>
<tr>
<td>High comorbidity</td>
<td>Monitor targets</td>
</tr>
<tr>
<td>High persistence into adulthood</td>
<td>Symptoms</td>
</tr>
<tr>
<td>Expensive</td>
<td>Function</td>
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### Your Role

- Know the prescriber
- Know the common meds and common side effects
- Know the targets
- Ask questions
- Share observations
- Think timeline
- FBA
- What else has been tried?
Public Domain Monitoring Tools

- CIS
- PHQ-9
- Mood and Feeling Questionnaire
- SCARED
- Vanderbilt’s
- Behavior logs