Managing Complicated ADHD in Primary Care

Nhung T. Tran, MD, FAAP

Developmental-Behavioral Pediatrics
Scott & White Healthcare
Section of Child Development
Associate Professor
Texas A&M Health Science Center
College Of Medicine

4th Annual Central Texas Pediatric Subspecialty Update for the Primary Care Provider

Objectives

• Know common comorbidities in ADHD and their prevalence
• Know the management of ADHD with comorbidities in primary care and when to refer
• Be familiar with issues of monopharmacy versus polypharmacy
• Know the management of ADHD in preschool aged children

AAP Clinical Practice Guidelines (2011)

• Action statement 1: PCP should initiate an evaluation for ADHD for any child 4 through 18 years who present with symptoms
• Action statement 2: To make the diagnosis, PCP should determine DSM-IV-TR criteria have been met
• Action statement 3: In the evaluation of a child for ADHD, the PCP should include assessments for coexisting conditions
• Action statement 4: PCP should recognize ADHD as chronic condition
• Action statement 5: Recommendation for treatment will vary with age

ADHD Brief Overview

Fidgety Phil Heinrich: Hoffman, physician (1809-1894)
Deficit of moral control: Sir George Frederic Still, physician (1868-1941)
Post-encephalitic behavior disorder
Methylphenidate synthesized: Leandro Panizzon (marketed as Ritalin in 1954)
Minimal brain dysfunction

Post-encephalitic behavior disorder

Deficit of moral control: Sir George Frederic Still, physician (1868-1941)

Methylphenidate synthesized: Leandro Panizzon (marketed as Ritalin in 1954)

Minimal brain dysfunction

ADHD: DSM-IV

Attention Deficit Disorder (with or without hyperactivity): DSM-III


(Drange KW, et al, 2010)
what’s next

- Slowed cortical development (Shaw et al., 2012)
  - n=234 with ADHD
  - n=231 controls
  - Most pronounced difference in right frontal lobe
- EEG marker: theta to beta ratio (Loo & Makeig, 2012)

prevalence

- Prevalence:
  - 2-8% of preschool-age children
  - 4-12% of school-age children
  - 3-8% of adolescents
  - 4% in adults
    - 38% still met full diagnostic criteria at 19 years old
    - 72% still had at least 1/3 of symptoms persist into adulthood
- Male-female ratio is 3:1, but girls less recognized
- Etiologies:
  - Genetic versus non-genetic factors
  - Parenting, diet, and culture do not cause ADHD, but influence the outcome

DSM-IV criteria: inattention

- Careless mistakes
- Difficulty sustaining attention
- Does not seem to listen
- Does not follow through
- Avoids tasks that require mental effort
- Cannot organize tasks
- Loses necessary items
- Easily distracted
- Forgetful in daily activities

DSM-IV criteria: hyperactivity-impulsivity

<table>
<thead>
<tr>
<th>Hyperactivity</th>
<th>Impulsivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fidgets, squirms in seat</td>
<td>Blurs out answers</td>
</tr>
<tr>
<td>Leaves seat</td>
<td>Difficulty waiting turn</td>
</tr>
<tr>
<td>Runs about or climbs excessively</td>
<td>Interrupts or intrudes on others</td>
</tr>
<tr>
<td>Difficulty playing quietly</td>
<td>“On the go” or “driven by a motor”</td>
</tr>
<tr>
<td>“On the go” or “driven by a motor”</td>
<td></td>
</tr>
<tr>
<td>Talks excessively</td>
<td></td>
</tr>
</tbody>
</table>

DSM-IV criteria

- Symptoms must be present before age 7 years of age
- Symptoms present for ≥6 months
- Significant impairment in ≥2 settings (e.g., school and home) and in social, academic or occupational functioning
- Symptoms not accounted for by another mental health disorder
- Subtypes:
  - ADHD, primarily inattentive-type
  - ADHD, primarily hyperactive/impulsive type
  - ADHD, combined-type
**diagnosis**

- **Goal:**
  - Distinguish ADHD from age-appropriate behaviors
- **Tips:**
  - Obtain observation from multiple sources
  - Problems only at home is inconsistent with ADHD
  - Avoid personal biases
  - Under-diagnosis can be more harmful than over-diagnosis
  - Medical conditions are not significant considerations
  - Psychological or psychoeducational assessments not necessary for diagnosis

**ADHD Treatment**

**stimulants**

- Extensively studied
- MPH and AMP have equal efficacy, side effects
- Wide individual variation in how individual patients will respond
- Avoid prescribing the same stimulant

**stimulants: dosing**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Starting dose</th>
<th>Maximum dose*</th>
<th>Usual dosing</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPH d-MPH</td>
<td>5 mg qd/bid</td>
<td>2 mg/kg/d up to 80 mg/d</td>
<td>tid (3-6h)</td>
</tr>
<tr>
<td>Cross-MPH</td>
<td>18 mg qd</td>
<td>2 mg/kg/d up to 60 mg/d</td>
<td>bid (5-6h)</td>
</tr>
<tr>
<td>MPH CD</td>
<td>10 mg qd</td>
<td>2 mg/kg/d up to 80 mg/d</td>
<td>qd (5-6h)</td>
</tr>
<tr>
<td>MPH LA</td>
<td>10 mg qd</td>
<td>2 mg/kg/d up to 60 mg/d</td>
<td>qd (6-8h)</td>
</tr>
<tr>
<td>MPH XR</td>
<td>5 mg qd</td>
<td>1 mg/kg/d up to 40 mg/d</td>
<td>qd (10-12h)</td>
</tr>
<tr>
<td>MTS</td>
<td>10 mg qd</td>
<td>up to 30 mg/d</td>
<td>qd (9-12h)</td>
</tr>
<tr>
<td>MAS</td>
<td>2.5-5 mg qd</td>
<td>1 mg/kg/d up to 40-60 mg/d</td>
<td>bid (4-5h)</td>
</tr>
<tr>
<td>MAS XR</td>
<td>5-10 mg qd</td>
<td>1 mg/kg/d up to 40-60 mg/d</td>
<td>qd (10-12h)</td>
</tr>
<tr>
<td>dexAMP</td>
<td>2.5-5 mg qd</td>
<td>1 mg/kg/d up to 40-60 mg/d</td>
<td>bid (4-5h)</td>
</tr>
<tr>
<td>dexAMP Spansules</td>
<td>5 mg qd</td>
<td>1 mg/kg/d up to 40-60 mg/d</td>
<td>qd (6-8h)</td>
</tr>
<tr>
<td>LDX</td>
<td>20 mg qd</td>
<td>70-100 mg/d</td>
<td>qd (10-12h)</td>
</tr>
</tbody>
</table>

*Maximum dose may exceed FDA approved dose limits

**stimulants: side effects**

- (Efron et al, 1997)
- (Cortese et al, 2013)
stimulants: common concerns

- Growth: mixed evidence
  - Zhang et al (2010): Change in height for methylphenidate group was -1.86+/-0.82 cm compared to controls 0.26+/-0.51 cm (P<0.001). (n=147)

- Sudden cardiac death: relatively solid evidence (Olfson et al, 2012)
  - Population: 0.8-1 per 100,000 person-years
  - MPH: 0.2 per 100,000 person-years (n=10,734,000 Rx)
  - AMPH: 0.3 per 100,000 person-years (n=70,699,000 Rx)
  - Atomoxetine: 0.5 per 100,000 person years (n=9,419,000 Rx)

stimulants: concerns

- Later substance abuse: solid evidence it won’t (Humphreys et al, 2013)
  - Meta-analysis of 15 longitudinal studies (n=2,565)
  - Objective: determine association between stimulant treatment and later substance outcomes
  - Alcohol, cocaine, marijuana, nicotine, nonspecific drugs
  - Results: outcomes comparable in children with or without treatment

atomoxetine

- Specific noradrenergic reuptake inhibitor
- Consider if:
  - Cannot tolerate stimulant
  - Co-morbid tic disorder
  - Co-morbid anxiety disorder
- Side effects:
  - Similar to stimulants, except for abdominal pain
  - Rare hepatitis
  - Rare suicidal ideation

atomoxetine: dosing

- Dosing:
  - Starting dose: 0.5 mg/kg/d
  - Target dose: 1.2 mg/kg/d up to 1.4 mg/kg/d or 100 mg/d (whichever is lower)
  - Usual dosing: qd or bid (for higher doses)
- Dosage forms:
  - 10 mg, 18 mg, 25 mg, 40 mg, 60 mg capsules (swallowed whole)
- Tips:
  - Drug-drug interaction with SSRI: decrease dose of atomoxetine
  - Switching from stimulant: d/c stimulant, start atomoxetine monotherapy, then re-evaluate need for stimulant add-on
alpha-agonist

- Clonidine
  - Declining use in daytime due to sedation
  - Most often used as single dose QHS for insomnia
  - Most often used as adjunctive treatment
- Clonidine extended-release (Kapvay)
  - Tolerated as monopharmacy
  - Most often used as adjunctive treatment

(Rosenbloom et al, 2008)

(Kollins et al, 2011)

alpha-agonist

- Guanfacine
- Guanfacine extended-release (Intuniv)

(Biederman et al, 2008)

(Kollins et al, 2011)

alpha-agonist

- Consider if:
  - Did not tolerate stimulant or atomoxetine
  - Co-morbid tic
- Side effects:
  - Sedation
  - Constipation
- Monitor:
  - Blood pressure, heart rate

(Biederman et al, 2008)

alpha-agonist: dosing

<table>
<thead>
<tr>
<th>Week</th>
<th>Dosage (mg) (weight &lt;45 kg)</th>
<th>Dosage (mg) (weight &gt;45 kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>Clonidine</td>
<td>Guanfacine</td>
</tr>
<tr>
<td>1-2</td>
<td>0.05 qhs</td>
<td>0.5 qhs</td>
</tr>
<tr>
<td>3-4</td>
<td>0.05 bid</td>
<td>0.5 bid</td>
</tr>
<tr>
<td>5-6</td>
<td>0.05 tid</td>
<td>0.5 tid</td>
</tr>
</tbody>
</table>

Week | Dosage (mg) |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>Kapvay</td>
</tr>
<tr>
<td>1</td>
<td>0.1 qhs</td>
</tr>
<tr>
<td>2</td>
<td>0.1 qam &amp; 0.1 qhs</td>
</tr>
<tr>
<td>3</td>
<td>0.1 qam &amp; 0.2 qhs</td>
</tr>
<tr>
<td>4</td>
<td>0.2 qhs &amp; 0.2 qhs</td>
</tr>
</tbody>
</table>

ADHD Favorite Resources

1. ADHD medication guide: www.adhdmedicationguide.com
2. ADHD medication handout from CHADD: www.adhdmedicationguide.com/adhd_med_guide.pdf

ADHD and Co-morbidities
common co-morbidities

- **Prevalence** (Larson et al., 2011)

<table>
<thead>
<tr>
<th>Disorder</th>
<th>No ADHD (%)</th>
<th>ADHD (%)</th>
<th>Adjusted Relative Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning disability</td>
<td>5.3</td>
<td>26.1</td>
<td>7.79</td>
</tr>
<tr>
<td>Conduct disorder</td>
<td>1.8</td>
<td>37.4</td>
<td>12.08</td>
</tr>
<tr>
<td>Anxiety</td>
<td>2.1</td>
<td>37.8</td>
<td>7.45</td>
</tr>
<tr>
<td>Depression</td>
<td>3.4</td>
<td>43.9</td>
<td>8.04</td>
</tr>
<tr>
<td>Speech problem</td>
<td>2.5</td>
<td>18.8</td>
<td>4.43</td>
</tr>
<tr>
<td>Autism spectrum/d/o</td>
<td>0.6</td>
<td>6.0</td>
<td>3.82</td>
</tr>
<tr>
<td>Hearing problem</td>
<td>1.2</td>
<td>6.2</td>
<td>2.77</td>
</tr>
<tr>
<td>Epilepsy or seizure</td>
<td>0.6</td>
<td>6.6</td>
<td>3.93</td>
</tr>
<tr>
<td>Vision problem</td>
<td>1.4</td>
<td>8.3</td>
<td>3.47</td>
</tr>
<tr>
<td>Tourette syndrome</td>
<td>0.09</td>
<td>1.3</td>
<td>10.70</td>
</tr>
<tr>
<td>Any MH/ND d/o</td>
<td>21.5</td>
<td>66.9</td>
<td>3.12</td>
</tr>
</tbody>
</table>

Percentage of children with ADHD who have comorbid disorders (n=5,028)

- **Three** 16%
- **Two** 18%
- **One** 33%
- **Zero** 33%

screening tools

- **ADHD**: NICHQ Vanderbilt Assessment Scale
- **Others**:
  - Mood and Feeling Questionnaire (MFQ)
  - Self Reported Child Anxiety Related Disorders (SCARED)
  - Child Mania Rating Scale (CMRS)
  - See Massachusetts General Hospital [http://www2.massgeneral.org/schoolpsychiatry/screeningtools_table.asp](http://www2.massgeneral.org/schoolpsychiatry/screeningtools_table.asp)

Oppositional Defiant Disorder (ODD)

- **Recurrent pattern of negativistic, disobedient, hostile behaviors**
- **Prevalence:**
  - 2-16% in general population
  - Up to 50% in children with ADHD
- **Etiologic considerations:**
  - Genetic factors (slight)
  - Environmental factors (significant)
  - Temperamental factors (significant)
- **Presentation:**
  - Worse in > out of home.
  - In young children, ODD symptoms often secondary to ADHD.
  - In older children, ODD symptoms often mimic inattention.

ODD

- **Symptoms:**
  - Tantrums
  - Persistent stubbornness
  - Resistance to directions
  - Inflexibility
  - Deliberate, persistent testing of limits
  - Aggression
  - Labile mood
  - Low frustration tolerance
  - Low self-image
ODD

- Diagnostic criteria: at least 6 months, during which four (or more) of the following are present:
  - often loses temper
  - often argues with adults
  - often actively defies or refuses to comply with adults’ requests or rules
  - often deliberately annoys people
  - often blames others for his or her mistakes or misbehavior
  - is often touchy or easily annoyed by others
  - is often angry and resentful
  - is often spiteful or vindictive

Treatment:
- Psychosocial therapy – primary
  - Cognitive-behavioral therapy
  - Family therapy
  - Collaborative Problem Solving (www.livesinthebalance.org)
- Parenting (parent training)
- Anticipatory guidance (e.g., limit exposure to violence), avoid giving parenting advice

ODD

- Treatment:
  - Psychosocial therapy – primary
    - Cognitive-behavioral therapy
    - Family therapy
    - Collaborative Problem Solving (www.livesinthebalance.org)
  - Parenting (parent training)
  - Anticipatory guidance (e.g., limit exposure to violence), avoid giving parenting advice

ADHD and co-morbid ODD

- Optimize treatment of ADHD
  - Treatment for ADHD effective with or without ODD
  - Aggressive outbursts (in the absence of mania and/or psychosis) is not a contraindication to treating ADHD
  - Intermittent substance abuse is not a contraindication to treating ADHD
- Stress to parents that psychosocial therapy is even more important

Aggression

Often co-occurs with ADHD + ODD

- Prevalence:
  - Not well studied
  - Estimated 45% of children with ADHD
- Presentation:
  - Property (destructive)
  - People
  - Self
  - Animals
- Useful to distinguish occasional outbursts versus daily or nearly daily “rages”

<table>
<thead>
<tr>
<th>Impulsive</th>
<th>Precautory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-profitable damaging of own property</td>
<td>Steals others’ property</td>
</tr>
<tr>
<td>Displays aggressive acts in front of people</td>
<td>Hides aggressive acts</td>
</tr>
<tr>
<td>Completely out of control when aggressive</td>
<td>Can control their own behavior when aggressive</td>
</tr>
<tr>
<td>Exposes self to physical harm when aggressive</td>
<td>Very careful to protect self when aggressive</td>
</tr>
<tr>
<td>Fights with stronger children</td>
<td>Fights with weaker children</td>
</tr>
<tr>
<td>Is aggressive without a purpose</td>
<td>Tried to get something from, has a reason for being aggressive</td>
</tr>
<tr>
<td>Aggression is unplanned, out of the blue</td>
<td>Plans aggressiveness</td>
</tr>
<tr>
<td>Expresses remorse after aggression</td>
<td>Looks proud of being aggressive</td>
</tr>
</tbody>
</table>
psychosis

- Does your child ever say that he hears voices talking to him? Does he talk to people who are not there? (Exclude imaginary friends in young children)
- Does your child ever say he is seeing things?
- Does your child feel people are always trying to get him or does he act paranoid?
- Does he believe strange things that other kids his age just don’t believe?
- Refer for psychiatric evaluation

ADHD and co-morbid aggression

- First, rule out mania/psychosis
  - Refer to psychiatrist if symptoms of mania/psychosis or if an imminent threat to self or others
- Then, use Texas Children’s Medication Algorithm Project (Mieska et al., 2006)
  - Begin treatment for ADHD: stimulants significantly improve aggression in ADHD (Comer, et al, 2002; Blader et al, 2012)
  - Add psychosocial therapy if no improvement
  - Add second-generation antipsychotic (SGA)
  - If no response, refer to psychiatrist

ADHD and co-morbid aggression

  - Basic treatment group (n=84): parent training + stimulant
  - Augmented treatment group (n=84): parent training + stimulant + risperidone

second generation antipsychotics

- Generic
- Brand
- aripiprazole (L) 
  - Abilify®
- clozapine (L) 
  - Clozaril®
- olanzapine (M) 
  - Zyprexa®
-quetiapine (M) 
  - Seroquel®
- risperidone (H) 
  - Risperdal®
- ziprasidone (M) 
  - Geodon®

L = low potency, M = medium or intermediate potency, H = high potency

- Side effects: drooling in the absence of EPS (common), weight gain, elevated prolactin, sedation
- Baseline measures: CMP, lipid panels, HT, WT (repeat in 3 months then every 6 months)

second generation antipsychotics: weight

Distribution of weight change in double-blind short-term studies at 4-12 weeks (Parsons, et al, 2009)

- Placebo: n=87
  - Mean change: -0.0 lb
- Ziprasidone: n=1.063
  - Mean change: +1.4 lb
- Haloperidol: n=1.229
  - Mean change: +2.3 lb
- Risperidone: n=1.22
  - Mean change: +4.3 lb
- Olanzapine: n=1.12
  - Mean change: +11.1 lb

Distribution of weight change in double-blind long-term studies at 1 year (Parsons, et al, 2009)

- Placebo: n=30
  - Mean change: +0.09 in lb/month
- Ziprasidone: n=31.1
  - Mean change: +0.36
- Haloperidol: n=16
  - Mean change: +0.41
- Risperidone: n=82
  - Mean change: +0.62
- Olanzapine: n=15
  - Mean change: +0.8 in lb/month
## Second Generation Antipsychotics: Dosing

<table>
<thead>
<tr>
<th>Week</th>
<th>Preadolescents</th>
<th>Adolescents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Risperidone</td>
<td></td>
</tr>
<tr>
<td>1-2</td>
<td>0.5 mg qhs</td>
<td>1 mg qhs</td>
</tr>
<tr>
<td>3-4</td>
<td>0.5 mg bid</td>
<td>1 mg bid/tid</td>
</tr>
<tr>
<td>5-6</td>
<td>1 mg bid/tid</td>
<td>2 mg bid/tid</td>
</tr>
<tr>
<td></td>
<td>Aripiprazole</td>
<td></td>
</tr>
<tr>
<td>1-2</td>
<td>2.5-5 mg/d</td>
<td>5-10 mg/d</td>
</tr>
<tr>
<td>3-4</td>
<td>10-15 mg/d</td>
<td>15-20 mg/d</td>
</tr>
<tr>
<td>5-6</td>
<td>2.5-5 mg/d</td>
<td>5-10 mg/d</td>
</tr>
<tr>
<td></td>
<td>Quetiapine</td>
<td></td>
</tr>
<tr>
<td>1-2</td>
<td>25 mg qd/bid</td>
<td>50 mg bid</td>
</tr>
<tr>
<td>3-4</td>
<td>50 mg bid</td>
<td>200 mg bid</td>
</tr>
<tr>
<td>5-6</td>
<td>100-200 mg bid</td>
<td>300 mg bid</td>
</tr>
</tbody>
</table>

## Depressive Disorders

### Prevalence:
- 1-2% of pre-pubertal children, 3-8% in adolescents
- Estimated 13.0% in children with ADHD (Larson et al, 2011)

### Etiologic Considerations:
- Genetic
- Environmental
- Neurodevelopmental factors/stages
- Medical

### Types:
- Major depressive disorder
- Dysthymia
- (Adjustment disorder with depressed mood)

### Core symptom: sadness versus irritability
- Use different words like sad, grouchy, down in the dumps, irritable, unhappy

### Quantify
- How often do they occur?
- How long do each episodes last?
- How long has your child felt this way?

### Always ask about
- Neurovegetative signs
- Self-esteem
- Suicidal ideation
- Past episodes of depression

### Treatment:
- Psychosocial therapy - primary
  - Cognitive Behavioral Therapy (CBT)
  - Interpersonal Psychotherapy (IPT)
  - Family/group therapy
- Pharmacotherapy
  - Selective Serotonin Reuptake Inhibitors (SSRI)
  - Non-SSRIs
- Educational
  - Supports
  - Special Education under “Emotional Disturbance” if severe

### TADS, 2004:
- N=439, ages 12-17
- Response rates:
  - FLX + CBT: 71%
  - FLX: 61%
  - Placebo: 35%
irritability

- ODD-type
  - Brief episodes of anger related to frustration, mood returns to normal as soon as frustration passes
- Mad/cranky
  - "Slow burn" of prolonged negative mood, not related to stressors, pessimistic (unipolar in nature)
- Super angry/grouchy
  - Explosive rages, intermixed with silliness and excitement (bipolar in nature)

(Mick E, et al., 2005)

irritability

- Depressive episode:
  - Sleep changes
  - Interest loss
  - Guilt, worthlessness
  - Energy loss
  - Concentration loss
  - Appetite, weight loss or gain
  - Psychomotor retardation or agitation
  - Suicidal ideation

- Manic episode
  - Abnormal mood: euphoria + irritability (extreme, persistent, threatening, out-of-control, rages)
  - Distractibility
  - Increased activity/energy
  - Grandiosity
  - Flight of ideas
  - Activities with bad outcome
  - Sleep decreased
  - Talkativeness

ADHD and co-morbid depressive d/o

- First, distinguish demoralization versus depression
  - Refer to psychiatry if (1) suicidal ideation, or (2) depressed/irritable mood for at least an hour (3-5 times per week)
- Then, use Texas Children’s Medication Algorithm Project (Pliszka et al., 2006)
  - Treatment based on the presentation
  - Treat depression or ADHD first, depending on which is more severe

SSRI antidepressant dosing

<table>
<thead>
<tr>
<th></th>
<th>Child (mg/d)</th>
<th>Adolescent (mg/d)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Start</td>
<td>Max</td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>5-10</td>
<td>20</td>
</tr>
<tr>
<td>Sertraline</td>
<td>25-50</td>
<td>100</td>
</tr>
<tr>
<td>Citalopram</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Escitalopram</td>
<td>10</td>
<td>20</td>
</tr>
</tbody>
</table>
Anxiety Disorders

- Prevalence:
  - 13% of children and adolescents
  - Estimated 17% in children with ADHD (Larson et al, 2011)

- Etiologic considerations:
  - Genetic
  - Environmental
  - Temperamental

- Prognosis:
  - Often chronic, persistent into adulthood

Types

- Simple phobia (10-11%)
- Generalized anxiety disorder (3-10%)
- Obsessive compulsive disorder (2.5%)
- Separation anxiety disorder (4%)
- Social phobia (10-11%)
  - Generalized versus non-generalized
  - Selective mutism
- Posttraumatic stress disorder (1-14%)
- Panic disorder (1.5-3.5%)

Presentation:

- Cognitive – catastrophic thoughts, poor school performance
- Physical – nausea, pain, headaches, eating problems, sleeping problems
- Emotional – fears, worry
- Behavioral – avoidance, escape, emotional outbursts

- Ask about
  - Duration, frequency, intensity
  - Anticipatory vigilance

Treatment:

- Psychosocial therapy – primary
  - Parent training for children <8 years old
  - Cognitive Behavioral Therapy (CBT) for children >8 years old
- Pharmacotherapy – when severe impairments
  - Selective Serotonin Reuptake Inhibitors (SSRI)
  - Non-SSRIs
  - Educational
  - Support
  - Special Education under “Emotional Disturbance” if severe

ADHD and co-morbid anxiety d/o

- Distinguish between developmentally appropriate worries, fears
- Then, use Texas Children’s Medication Algorithm Project (Flisak et al, 2006)
  - Begin with atomoxetine or stimulant
  - Add stimulant, atomoxetine or SSRI depending on response

(Geller et al, 2007)
### Tic Disorders

#### Prevalence:
- Estimated 20% in children with ADHD (Larson *et al.*, 2011)
- Tics occurring during stimulant treatment are usually transient, rarely becoming chronic

#### ADHD and co-morbid tic disorder
- Use Texas Children’s Medication Algorithm Project (Pliszka *et al.*, 2006)
- Or alternative (but similar) algorithms (see right) (Rizzo, *et al.*, 2013)

<table>
<thead>
<tr>
<th>Therapies</th>
</tr>
</thead>
<tbody>
<tr>
<td>alpha-2 agonist (monopharmacy)</td>
</tr>
<tr>
<td>stimulant (monopharmacy)</td>
</tr>
<tr>
<td>stimulant + alpha-agonists</td>
</tr>
<tr>
<td>atomoxetine or SGA</td>
</tr>
</tbody>
</table>

#### ADHD in preschool age children

- Red flags of moderate-severe ADHD:
  - Ejection or threatened ejection from school or child care center
  - Exhausted, exasperated caregivers
  - Discord between caregivers because of child’s behavior
  - Rejected by, isolated from peers
  - Risk of injury to self and others
  - Risks factors: strong family history of ADHD, underlying medical condition (e.g., prenatal alcohol exposure)

- AAP guidelines (2011) say try psychosocial therapy first
- Before medications, consider:
  - Deferring until has had structured learning opportunities
  - Whether benefits outweigh risks (school, home, social, personal safety)
  - Referral to specialist
- Consider medications if:
  - Inadequate response to psychosocial therapy
  - Moderate to severe impairment in functioning
  - Persistent symptoms for >9 months
summary

final tips

- Screens negative for co-morbidity
  - For 5 years and younger: consider psychosocial therapy before or concurrently with ADHD medication
  - For 6 years and older: proceed with ADHD medication
- Screens positive for ODD
  - Proceed with ADHD medication + behavioral therapy
- Screens positive for aggression
  - For occasional episodes: proceed with ADHD medication + behavioral therapy
  - For severe episodes: seek in depth psychiatric assessment

final tips

- Screens positive for mania
  - Seek in depth psychiatric assessment
- Screens positive for depression or anxiety
  - If symptoms below threshold: proceed with ADHD medication
  - If symptoms above threshold*: defer ADHD medication, proceed with treatment for depression or anxiety first
    *Threshold: sad/irritable/anxious mood 3-5 times per week for at least an hour; neurovegetative symptoms; separation problems
- Screens positive for tic disorder
  - Proceed with ADHD medication

final tips

- Medications should not be avoided because of unrealistic fears
- Parenting and behavior therapy works, but has limits
- Failure is not an option
- Avoid underrecognition, undertreatment
- Special education not an answer to every issue

questions?

vtran@sw.org

references

<table>
<thead>
<tr>
<th><strong>references</strong></th>
</tr>
</thead>
</table>

---

**notes**