Overview of Psychotropic Medications for Youth

PSYCHOTROPIC MEDICATIONS FOR YOUTH

Overview of Psychotropic Medications
How Do Psychotropic Medications Work?

Psychotropic medications act on the brain and central nervous system. They change the way chemicals in the brain called “neurotransmitters” send messages between brain cells through a synapse or crossing. Each psychotropic medication is used to treat certain “target” symptoms.
# Target Symptoms (Behaviors)

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<th>Anger/Depression</th>
<th>Impulsive</th>
<th>Withdrawn Sad</th>
<th>Destructive Defiant</th>
<th>Anxious</th>
<th>Difficulty w/ Focus</th>
<th>Manipulative</th>
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The classes of psychotropic medications are:
• Stimulants
• Antidepressants
• Antipsychotics
• Mood stabilizers
• Anxiolytics

We will now discuss the different classes (types) of psychotropic medications used in children, and examples of medications in each class and their side effects.
Stimulants

Stimulants are commonly used to treat Attention-Deficit Hyperactivity Disorder (ADHD). Symptoms of ADHD interfere with functioning at school and in daily living and may include:

- Short attention span
- Inability to stay still
- Being impulsive

Stimulants may be short acting or long acting. Short acting means that they act right away but do not last a long time. Long acting means that they take longer to act but last longer. Some children need to take a short acting and a long acting stimulant to get coverage throughout the day. Taking a short acting and a long acting stimulant together counts as only one stimulant and is not outside the Parameters.
Stimulants

Examples of short acting stimulants
- Dextroamphetamine (Dexedrine, Dextrostat)
- Methylphenidate (Ritalin, Metadate, Methylin)
- Amphetamine (Adderall)
- Dexmethylphenidate (Focalin)

Examples of long acting stimulants
- Amphetamine (Adderall XR)
- Lisdexamfetamine (Vyvance)
- Methylphenidate (Concerta)
- Dexmethylphenidate (Focalin XR)
Common Side Effects and Serious Adverse Reactions of Stimulants

**Side Effects**
- Decreased appetite
- Weight loss
- Headaches
- Stomachaches
- Trouble getting to sleep
- Jitteriness
- Social withdrawal

**Adverse Reactions**
- Sudden death in children with pre-existing serious heart problems
- High blood pressure
- Problems with growing

Psychotropic Medications
Other ADHD Treatments

Sometimes medications that are not stimulants are used to treat ADHD. These medications come from different classes.

Examples are:

- **Clonidine (Catapres, Kapvay)**—an antihypertensive used to treat high blood pressure in adults but causes sedation in children in small doses
- **Guanfacine (Tenex, Intuniv)**—an antihypertensive used to treat high blood pressure in adults but causes sedation in children in small doses
- **Atomoxetine (Strattera)**—a selective norepinephrine reuptake inhibitor
- **Bupropion (Wellbutrin, Wellbutrin SR, Wellbutrin XL)**—newer antidepressant thought to act on norepinephrine and dopamine
- **Imipramine (Tofranil)**—older antidepressant, usually used to treat bed wetting, but may be used to treat ADHD
Possible Side Effects of Anti-hypertensives

**Side Effects**

- Dry mouth
- Headache
- Sedation
- Orthostatic hypotension
- Fatigue
Stimulants and anti-hypertensives are usually the first medications tried for ADHD.

Sometimes antidepressants are given for ADHD if 2 to 3 stimulants are tried and do not work.

Stimulants should be started at the lowest dose and the dose increased as needed.

A short acting stimulant should last for about 4 hours and a long acting stimulant for about 8-12 hours.
Antidepressants are used in children to treat symptoms of depression and other conditions.

**Symptoms of depression may include:**
- Feelings of hopelessness or helplessness
- Loss of energy
- Changes in appetite
- Weight gain or weight loss
- Not being able to enjoy activities the child used to enjoy
- Thoughts of suicide

**Antidepressants help with other conditions:**
- School phobias
- Panic attacks
- Eating disorders
- Autism
- ADHD
- Bedwetting
- Anxiety disorders
- Obsessive-compulsive disorder (OCD)
- Post-traumatic stress disorders (PTSD)
- Personality disorders
- Sleeping problems
Antidepressants: SSRIs

Selective Serotonin Reuptake Inhibitors (SSRIs) are often used to treat depression and other disorders in children. SSRIs are popular because they are safer than some of the older antidepressants if overdose occurs.

Examples are:
- Citalopram (Celexa)
- Escitalopram (Lexapro)
- Fluoxetine (Prozac)
- Fluvoxamine (Luvox)
- Sertraline (Zoloft)
- Paroxetine (Paxil)
Possible Side Effects and Adverse Reactions of SSRI Antidepressants

Flu-like symptoms:
- Headaches
- Nausea
- Stomach upset
- Dry mouth
- Extreme sweating

Other side effects:
- Trouble sleeping
- Irritability
- Weight changes

Warning
The caregivers of children taking SSRIs should monitor them for depression that is getting worse and thoughts about suicide. The caregiver or medical consenter should immediately talk to the doctor if this happens.
Suicide risk with SSRIs: Re-analysis

Gibbons and colleagues performed a large analysis of all current research with antidepressants.

They found fluoxetine to be no different than placebo with regard to suicide risk.

Fluoxetine decreased depressive symptoms more rapidly than placebo and reduced depression severity.

Take away: We should still monitor for suicidality in patients recently started on antidepressants, but...

*Untreated depression is still the biggest risk factor for both suicidal thoughts and suicide attempt.*

Arch Suicide Res. 2016 Sep 27:1-17
Antidepressants, SNRIs

Serotonin Norepinephrine Reuptake Inhibitors (SNRIs) are usually prescribed when SSRIs have not worked. SNRIs are not usually prescribed to children. However, they may be helpful in some cases.

Examples are:
- Venlafaxine (Extended Release Effexor XR)
- Duloxetine (Cymbalta)
- Desvenlafaxine (Pristiq)
- Milnacipran (Savella)
Common Side Effects and Serious Adverse Reactions of SNRI’s

**Side Effects:**
- Abnormal dreams
- Nervousness
- Body weakness
- Chills
- Cough
- Dizziness
- Headache
- High blood pressure
- Increased sweating
- Loss of appetite or weight
- Stomach or colon problems

**Adverse Reactions:**
- Thoughts of suicide
- Panic attacks
- Hallucinations

Psychotropic Medications
Children who have been traumatized may have problems with sleep. Atypical antidepressants are more often used to help children with sleep problems than to treat depression. These medications are usually safer for children than standard sleep medications.

**Examples are:**
- **Mirtazapine (Remeron)**
- **Trazodone (Desyrel)**
Common Side Effects and Serious Adverse Reactions of Atypical Antidepressants

**Side Effects:**
- Sleepiness
- Headache
- Constipation
- Dry mouth
- Agitation
- Nervousness
- Weight changes
- Flushing
- Sweating
- Tremors
- Changes in blood pressure

**Adverse Reactions:**
- Male erection that is unwanted, painful and lasts a long time (Trazodone)
- Low white blood cell count (Mirtazapine)
Other Information About Antidepressants

- These medications may take a couple of weeks to work.
- A child should never stop taking antidepressants suddenly. Your child’s doctor will help you wean the child off of the medication slowly. This will help prevent dizziness and other side effects.
Antipsychotics

Antipsychotics may be used to treat a number of conditions in children:
- Psychosis
- Bipolar disorder
- Schizophrenia
- Autism
- Tourette’s syndrome
- Severe aggression

Antipsychotics are divided into two groups, atypical (or second generation) antipsychotics and typical (or first generation) antipsychotics. First generation antidepressants were first developed in 1950, and second generation, in 1994.
Atypical (Second Generation) Antipsychotics

Atypical antipsychotics are the most common antipsychotics used in children. These antipsychotics are less likely to cause movement disorders (shuffling walk, tongue sticking out of mouth, drooling, etc.) than the typical antipsychotics.

Examples are:
- Aripiprazole (Abilify)
- Quetiapine (Seroquel)
- Olanzapine (Zyprexa)
- Risperidone (Risperdal)
- Lurasidone (Latuda)
- Clozapine (Clozaril, Fazaclol)
- Ziprasidone (Geodon)
- Paliperidone (Invega)
- Iloperidone (Fanapt)
- Asenapine (Saphris)
Possible Side Effects of Atypical Antipsychotics

Common Side Effects:
- Sleepiness or tiredness
- Dizziness
- Constipation
- Dry mouth
- Blurred vision
- Difficulty urinating
- Weight gain

Extrapyramidal Side Effects (EPS):
- Dystonia: muscle spasms; Stiff neck; tongue darting; trouble swallowing; tremor
- Akathisia: restlessness, unable to sit still
- Akinesia: rigid muscles; shuffling walk; drooling
Possible Serious Adverse Reactions of Atypical Antipsychotics

- Tardive dyskinesia (permanent involuntary movements of tongue, mouth, face, trunk, arms and legs that are more common with typical antipsychotics than with atypical)
- Overheating or heatstroke (prevent by drinking water and staying out of heat)
- Metabolic Syndrome (obesity, hypertension, increased blood glucose, triglycerides, and cholesterol)
- Neuroleptic malignant syndrome (extreme muscle stiffness, high fever, sweating, tremors, confusion, unstable blood pressure and heart rate). This is a medical emergency.

**Clozapine (Clozaril):**
- Can cause a dangerous drop in white blood cells
- Requires weekly blood work and close monitoring
- Usually used only when other treatments fail
Typical antipsychotics are only used in children with severe behavioral problems when other treatments fail or for short periods of time when children are in psychiatric hospitals.

** Extrapyramidal symptoms are more commonly associated with 1st generation examples are:

- Chlorpromazine (Thorazine)
- Haloperidol (Haldol)
- Perphenazine (Trilafon)
- Pimozide (Orap)
Other Information About Antipsychotics

- Each child is different, so a child may need to try different medications in order to find the one that works best.
- You should start seeing positive changes in 2-3 weeks or sooner, but it may take 6-8 weeks.
- A child should usually not stop taking an antipsychotic suddenly. This may cause fast changes in mood, agitation, aggression, nausea, sweating or tremors. The child’s doctor wean the child off the medication slowly.
Mood stabilizers are used to treat children with mood disorders, such as bipolar disorder. Children with bipolar disorder have extreme mood swings (manic or depressed states).

- When children are in the “manic” state, they may be very active, talk too much, have a lot of energy, and sleep very little. They may also be angry, irritable, or feel overly self-important.

- Children in the “depressed” state may:
  - Feel hopeless or helpless.
  - Have a loss of energy.
  - Have changes in appetite.
  - Gain or lose weight.
  - Not enjoy activities the child used to enjoy.
  - Have thoughts of suicide.
Mood Stabilizers

Some medications used to treat mood disorders are also used to treat seizure disorders. If it is used to treat seizures, it is not considered a psychotropic medication.

Medications that may be used to treat mood or seizures:
- Oxcarbazepine (Trileptal)
- Carbamazepine (Carbatrol, Tegretol, Tegretol XR)
- Divalproex (Depakote)
- Lamotrigine (Lamictal)

Medications that are only used as mood stabilizers:
- Lithium (Eskalith, Eskalith CR, Lithobid)

Psychotropic Medications
Common Side Effects and Serious Adverse Reactions of Carbamazepine (Tegretol)

**Side Effects:**
- Dizziness
- Drowsiness
- Nausea
- Unsteadiness
- Vomiting

**Adverse Reactions:**
- Reduction of blood cell production in the bone marrow
- Decreased red blood cells, white blood cells, and platelets

Children should have regular blood work to rule out decreased blood cells. Contact the doctor right way if the child has tiredness, weakness, easy bruising or unusual bleeding.
Common Side Effects and Serious Adverse Reactions of Divalproex (Depakote)

**Side Effects:**
- Indigestion
- Nausea/vomiting
- Drowsiness
- Hair loss
- Weight changes
- Changes in menstrual cycles
- Constipation

**Adverse Reactions:**
- Hyperammonemia
- Liver toxicity and liver failure (very rare but very serious)

Children taking Depakote should have regular blood work to check for liver problems and make the dose is safe and effective

Psychotropic Medications
Common Side Effects and Serious Adverse Reactions of Lamotrigine (Lamictal)

**Side Effects:**
- Dizziness
- Problems sleeping
- Drowsiness
- Blurred vision
- Vomiting
- Constipation
- Stomach aches

**Adverse Reactions:**
- Serious rashes
- Stevens Johnson Syndrome*

* Stevens Johnson Syndrome is a rare, but serious condition affecting the skin and mucous membranes. It is a medical emergency that requires hospitalization. It begins with swelling of the face and tongue, skin pain, blisters, hives, shedding of skin; the child may also have fever, sore throat, burning eyes, cough. **Immediately contact the doctor if a child develops a rash while taking this medication.**
Common Side Effects and Serious Adverse Reactions of Lithium

**Side Effects:**
- Fatigue
- Muscle weakness
- Nausea
- Stomach cramps
- Weight gain
- Urinating more often
- Slight hand tremor
- More thirsty
- Low blood sugar
- Lower thyroid function
- Hair loss

**Adverse Reactions:**
- These are signs of Lithium toxicity:
  - Repeated vomiting/diarrhea
  - Severe tremors
  - Difficulty walking/unable to walk
  - Poor coordination
  - Extreme sleepiness
  - Slurred speech/difficulty sleeping
  - Blurred vision/ringing in ears
  - Unable to control eyes going in circles
  - Muscle twitching
  - Seizures

**Children taking Lithium should have regular blood work to determine if Lithium levels are in the safe and effective range. It is important to ensure proper hydration, as levels are highly dependent on renal perfusion.**

Psychotropic Medications
Other Information About Mood Stabilizers

- Mood stabilizers may effect the metabolism, liver, kidneys, and thyroid.
- Children taking Tegretol, Depakote or Lithium should have routine blood work. Levels are usually checked in the morning before the medication is given to the child.
Anxiolytics (Tranquilizers)

Tranquilizers are used to treat people with severe anxiety that interferes with their daily activities. The Benzodiazepines are potentially addictive and are more commonly used in the hospital. However, they may be used to treat neurological problems in children, such as muscle spasms. Examples are:

- **Benzodiazepines:**
  - Clonazepam (Klonopin)
  - Lorazepam (Ativan)
  - Alprazolam (Xanax)

- **Other**
  - Buspirone (Buspar)
Common Side Effects and Serious Adverse Reactions of Anxiolytics

**Side Effects:**
- Sedation (sleepiness)
- Dizziness
- Unsteadiness
- Weakness
- Changes in appetite
- Constipation
- Nausea (buspirone)
- Headache (buspirone)

**Adverse Reactions:**
- Irritability
- Agitation
- Disinhibition (lack of filter, does or says things he/she would not normally)
- Respiratory depression (usually when taken with other medications)
Any Questions?

Psychotropic Medications