



# Psychotropic Medications for Children and Adolescents

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# Learning Objectives

1. Identify various classes of psychotropic medications, examples of medications in each class, and understand how psychotropic medications may affect symptoms in children with psychiatric impairments
2. Identify some of the potential benefits and side effects of various psychotropic medication
3. Identify some of the pediatric psychiatric diagnoses which may require medication and which medications may be useful for certain diagnoses.
4. Summarize evidence for treatment efficacy of psychotropic medication in children

# Classes of Medications

- Antidepressants/Anti-anxiety
- Mood Stabilizers
- Anxiolytics
- Antipsychotics
- Psychostimulants
- Hypnotics
- Antihistamines
- Other

# Antidepressants/Anti-anxiety

- Used to treat depressive symptoms and sometimes also anxiety symptoms.
- They take 10 days to 2 weeks to start to take effect and it takes approximately two months on a therapeutic dose before you see the maximum effect.
- Sudden stopping can cause flu like symptoms.

# Antidepressants (cont.)

- **Types of Antidepressants:**
  - ◆ Selective Serotonin Reuptake Inhibitors (SSRI's)
  - ◆ Serotonin and Norepinephrine reuptake inhibitors (SNRI's)
  - ◆ Other

# SSRI's

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

# SNRI's

- Effexor (Venlafaxine)
- Pristiq (Desvenlafaxine)
- Cymbalta (Duloxetine)

# Other

- Remeron (Mirtazapine) (tetracyclic)
- Symbyax (Zyprexa + Prozac)
- Bupropion ( Wellbutrin) (Zyban)  
(aminoketone class)

# Antidepressants (cont.)

- Potential side effects can include:
  - Sedation
  - Increased or decreased appetite
  - Dry mouth, eyes
  - Upset stomach, nausea, constipation
  - Headache

## Antidepressants (cont.)

- Usually take for 6-12 months
- First two weeks of antidepressant medication is important to monitor for agitation/suicidal thoughts
- Depression has a genetic component, therefore runs in families

## Older Antidepressants (Tricyclic)

- Amitriptyline (Elavil)
- Nortriptyline (Pamelor)
- Desipramine (Norpramin)
- Sinequan (Doxepin)
- Clomipramine (Anafranil)
- Imipramine (Tofranil)

Not used frequently anymore as antidepressants due to side effects, but are used for migraines and pain symptoms.

# Monoamine Oxidase Inhibitors

- Antidepressants that have potentially lethal side effects due to dietary restrictions (food with tyramine). Rarely used anymore. May be used when no other medications are helpful.

# Mood Stabilizers

- Standard treatment for bipolar disorders or mood disorders of a severe nature
- Generally take several months to achieve a therapeutic effect
- Can also be of benefit for impulsivity, intense anger, rage, reactivity.

# Mood Stabilizers

## Anticonvulsants

- Carbamazepine (Tegretol)
- Valproic Acid (Depakote)
- Oxcarbazepine (Trileptal)
- Gabapentin (Neurontin)
- Lamotrigine (Lamictal)
- Topiramate. (Topamax)
  
- Lithium (Lithobid, Eskalith)

# Mood Stabilizers (con't)

- Potential side effects can include:
  - Nausea
  - Sedation
  - Weight gain except Neurontin
  - Topamax can decrease appetite
  - Tremor, thyroid, kidney problems with Lithium
  - Bloodwork needs to be done with most of them.
  - Exceptions are Neurontin and Topamax

# Mood Stabilizers (con't)

- Beneficial effects include:
  - Mood stability
  - Decreased reactivity
  - Slower escalation to crisis
  - Decreased impulsivity
  - Lower intensity of anger outbursts

# Anxiolytics

- These are solely antianxiety medications
- Prefer not to use in children because many have the potential to be addictive.
- Most anxiety can be more effectively treated with the SSRI's such as Zoloft, usually at higher doses than they treat depression. Buspar can also be tried.

# Anxiolytics

- Alprazolam (Xanax)
- Chlordiazepoxide (Librium)
- Clonazepam (Klonopin)
- Diazepam (Valium)
- Lorazepam (Ativan)
- Buspirone (Buspar) (non-addicting)
- Oxazepam (Serax)
- Clorazepic Acid (Tranxene)

# Anxiolytics (con't)

- Common side effects may include:
  - Sedation
  - Lethargy
  - Dependence
  - Dizziness

# Antipsychotics

- Also may be known as Neuroleptics, typical or atypical or Major Tranquilizers
- Used for psychotic symptoms that may occur in disorders such as schizophrenia, depression with psychotic features, mania with psychotic symptoms, or severe anxiety with psychotic symptoms.
- Work to decrease the level of dopamine in the brain because level is too high.

## Antipsychotics (con't)

- The sedation effect can begin to work immediately, but generally it takes 4-5 days to begin to have a significant effect.
- Recommend duration of treatment is 4-6 months then try to discontinue slowly.

# Antipsychotics (con't)

## Atypical antipsychotics

- Risperidone (Risperdal)
- Olanzapine (Zyprexa)
- Quetiapine (Seroquel)
- Ziprasidone (Geodon)
- Aripiprazole (Abilify)
- Paliperidone (Invega)
- Clozapine (Clozaril)
- Iloperidone (Fanapt)
- Asenapine (Saphris)
- Lurasidone (Latuda)

# Antipsychotics (con't)

## Typical antipsychotics (older generation)

- Haloperidol (Haldol)
- Perphenazine (Trilafon)
- Chlorpromazine (Thorazine)
- Fluphenazine (Prolixin)
- Trifluoperazine (Stelazine)

Trilafon is still used because it is inexpensive and has few side effects. Haldol and Thorazine are used on inpatient units and emergency rooms due to being sedating and quick acting.

# Antipsychotics (con't)

## Side effects may include:

- Sedation
- Increased appetite
- Tremor, rigidity, restlessness
- Blood pressure or effects on the heart
- Tardive dyskinesia at high doses for long periods of time
- Many others including effects on liver and lipids

# Antipsychotics (con't)

## Benefits of Antipsychotics:

- Addresses hallucinations
- Addresses paranoia
- Helps to improve disorganized thoughts
- Helps improve thought blocking
- Helps decrease perseveration and rigidity of thought
- Helps improve mania with psychotic symptoms
- Helps with aggression in autism spectrum
- Addresses Mood instability

# Psychostimulants

- Stimulant medication is used to treat Attention Deficit Hyperactivity Disorder symptoms.
- They begin to work within 30-40 minutes and last 3 hrs to 8 hrs depending on formulation.
- There are several medications that are non-stimulants that are also used to treat the symptoms of inattention, distractibility, impulsivity, and hyperactivity.

# Psychostimulants (con't)

- Methylphenidate (Ritalin, Methylin)
- Methylphenidate (Concerta, Metadate, Ritalin LA, Quillivant, Jornay) Long acting
- Dexmethylphenidate (Focalin)
- Dextroamphetamine (Dexedrine)
- Amphetamine/Dextroamphetamine (Adderall)
- Lisdexamfetamine (Vyvanse)

# Psychostimulants (con't)

Possible side effects include:

- Decreased appetite
- Sedation, flat affect
- Psychotic symptoms
- Stomach discomfort
- Headache

# Non-Stimulant Medication

- Guanfacine (Tenex)
  - Guanfacine (Intuniv) long acting
  - Clonidine (Catapres, long acting is Kapvay)
  - Atomoxetine (Strattera)
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- ◆ Purpose is to address impulsivity, less so attention/focus.
  - ◆ Clonidine short acting, is sometimes used for sleep because a side effect is sedation. Kapvay better tolerated in daytime
  - ◆ They can take several days to weeks to take effect

# Non-Stimulant Medication (con't)

Possible side effects include:

- Decreased blood pressure
- Sedation
- Dizziness

# Hypnotics

- Used primarily for sleep and infrequently in children
- May cause daytime drowsiness, tiredness, coordination difficulties, headache

# Hypnotics (con't)

- Flurazepam (Dalmane)
- Temazepam (Restoril)
- Triazolam (Halcion)
- Diphenhydramine (Benadryl)
- Hydroxyzine (Atarax)
- Zolpidem (Ambien)
- Midazolam (Versed)
- Eszopiclone (Lunesta)

# Antihistamines

- Diphenhydramine (Benadryl)
  - Hydroxyzine (Vistaril, Atarax)
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- ◆ Frequently these are used for sedation for sleep or can be used as prns (as needed) for anxiety or agitation. They provide temporary relief and do not get to the root of the problem

- Prazosin – Alpha blocker. Traditional use is to treat high blood pressure. Can be used in adolescents with nightmares frequently related to PTSD diagnosis
- Propranolol- Beta Blocker. Traditional use is to treat high blood pressure. Can be used to treat “performance anxiety”. Contraindication is asthma

# Questions?

MEDICINE *of* THE HIGHEST ORDER

