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Treatment of ADHD in children and adolescents

What we will cover today

- FDA Status
- Informed consent
- ADHD Symptoms
- ADHD Treatment
 - Behavior therapy and Non-medication treatments
 - Medications
- Ways to engage the prescriber
- Interactive discussion/questions using 'Chat' function

What does FDA approval mean

- The FDA has decided the benefits outweigh the potential risks
 - FDA= Food and Drug Administration
- No drug is entirely risk-free
- Research and testing must show that the benefits of the drug for a particular condition outweigh the risks to patients of using the item.

ADHD Medications and FDA approval

- ADHD has many FDA approved medications (the most of all psychiatric diagnoses)
- Occasionally medications used for ADHD are 'off-label'
- The importance is to describe that the use is 'off-label' when obtaining informed consent to treat with medications
 - 'Off-label' does not mean bad
 - In Child Psychiatry many medication treatments are off label

Elements of Informed Consent

- Informed Consent
 - The information needed about treatment that needs to be communicated to the guardian in order to get consent to treat
- Elements of Informed consent
 - Purpose of proposed treatment (expected outcome)
 - Risk and benefit of treatment
 - Alternatives for treatment
 - Including non-medication options
 - Risks and benefit of alternatives
 - Risk and benefit of not receiving treatment
 - FDA status of medication options
 - Possible side effects (aka: adverse drug reactions or ADR's)

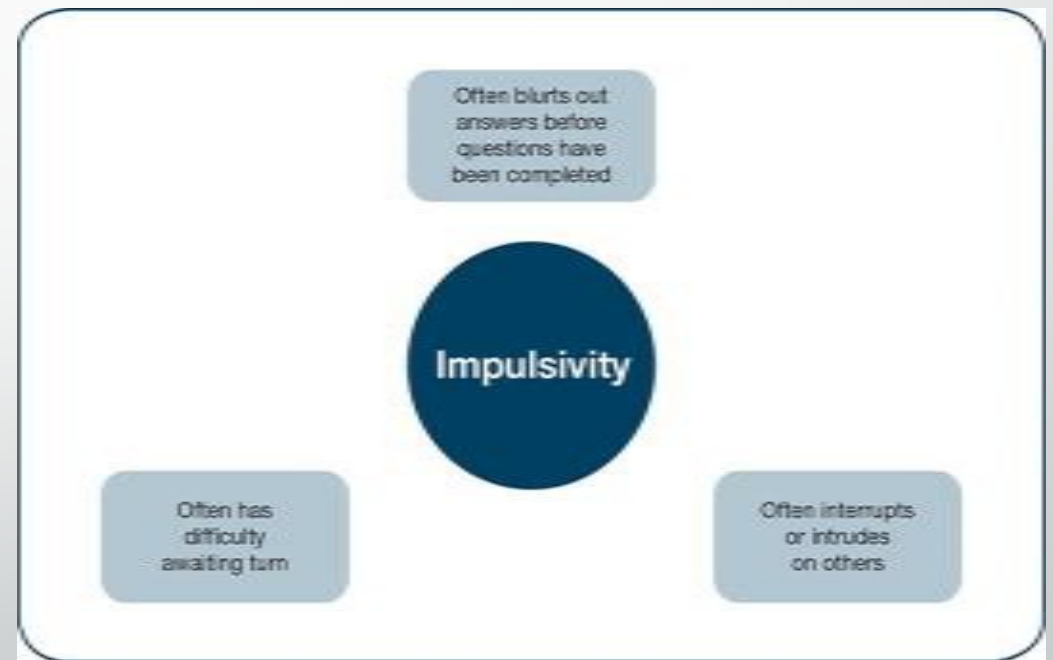
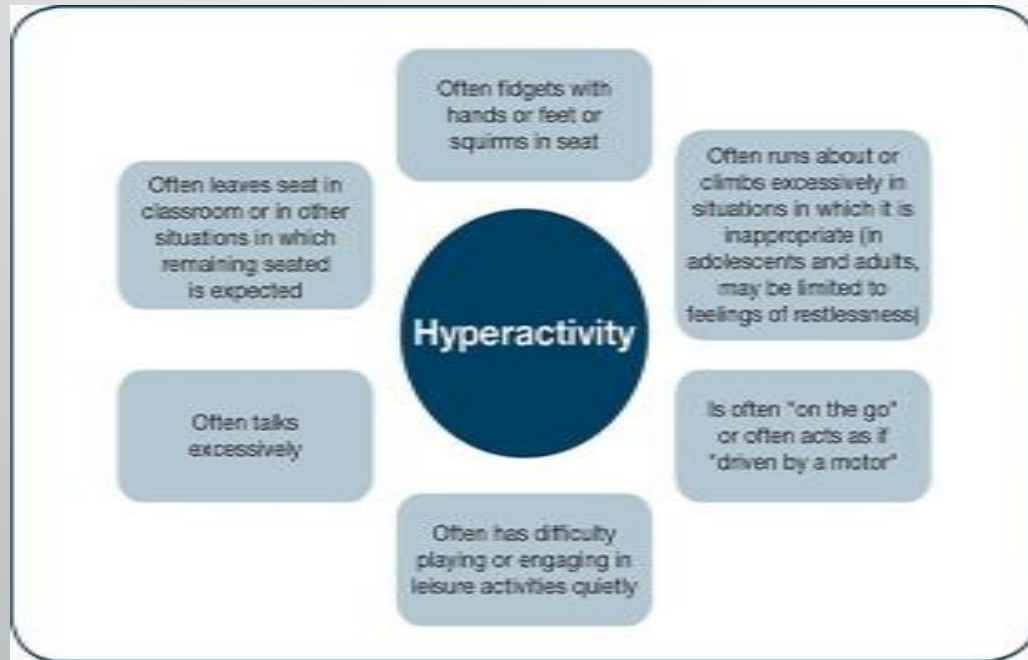
Symptoms of ADHD

- Inattention
- Hyperactivity/impulsivity
- Needs to occur in more than one setting
- Screening tools used to get info re: symptoms in the school
 - Vanderbilt or Connors

Symptoms of ADHD



Symptoms of ADHD



ADHD Treatment Algorithm

- Initial
- Behavioral Therapies, non-pharmacologic treatments
- 1st Line
- Stimulants- monotherapy with methylphenidate or amphetamines. If non-response, try a different stimulant.
- 2nd Line
- Non-stimulant (atomoxetine, guanfacine ER, clonidine ER)
- 3rd Line
- If partial response, combine 2nd line with stimulant
- 4th Line
- Non-FDA approved medications (bupropion, TCAs)

Behavior Therapies and non-medication treatments

- Behavior modification – home based or individual therapy (e.g. 1-2-3 Magic)
 - addresses specific problem behaviors by structuring time at home, establishing predictability and routines, and increasing positive attention
 - focuses on replacing negative habits and actions with positive ones
 - use a rewards system that targets very specific behaviors

Behavior Therapies and non-medication treatments

- PCIT (Parent Child Interactive Therapy)
 - evidence-based treatment (EBT) for young children
 - places emphasis on improving the quality of the parent-child relationship and changing parent-child interaction patterns
 - targeted for families with children ages 2-to-7 with oppositional, defiant, and other externalizing behavior problems
- School interventions (504 plan, IEP)

Medications to treat ADHD

- Stimulants
 - Methylphenidate, Amphetamine
 - Immediate release, Long-acting
- Non-Stimulants



ADHD Medications: Stimulants

Methylphenidate formulations

Brand	Frequency	Dosage Forms (mg)	Duration (hours)	Max Daily Dose (mg)	Crush/ Break?
Ritalin IR	2-3 times per Day	2.5, 5, 10, 20	2.5-4	60	Yes
Methylin IR®					
Ritalin SR	1-2 times daily	20	6-8	60	No
Metadate ER					
Ritalin LA®	1-2 times daily	10, 20, 30, 40, 50, 60	8-10	60	May open
Metadate CD®					
Concerta ER®	Once daily	18, 27, 36, 54	10-12	72	No
Daytrana® Patch	Once daily Patch	10, 15, 20, 30	9-12	30	No (patch)
QuilliChew ER®	Once daily	20, 30, 40	12-16	60	Yes
Quillivant ER liquid™	Once daily	25mg/5mL	8-10	60	No (liquid)
Focalin IR®	2-3 times per Day	2.5, 5, 10	3-5	20	Yes
Focalin XR®	Once daily	5, 10, 15, 20	8-10	40	May open

Amphetamine Formulations

Brand	Type	Dosage forms (mg)	Duration (hours)	Max daily dose (mg)	Crush/ Break?
Adderall IR®	2-3 times per day	5, 7.5, 10, 12.5, 15, 20, 30	4-6	40	Yes
Adderall XR®	Once daily	5, 10, 15, 20, 25, 30	8-10	30	May open
Dyanavel XR®	Once daily	2.5 mg/mL	~12	20 mg daily	No (liquid)
Adzenys XR-ODT®	Once daily	3.1, 6.3, 9.4, 12.5, 15.7, 18.8	~10	6-12 yrs: 18.8 13-17 yrs: 12.5	No (ODT)
Dexedrine IR®	2-3 times per day	5, 10	4-5	40	Yes
Dexedrine XR Spansules®	Once daily	5, 10, 15	5-9	40	No
Vyvanse®	Once daily	20, 30, 40, 50, 60, 70	8-10	70	May open

Stimulant: **Common Side Effects**

- Insomnia/Difficulty Sleeping
 - Evaluate product and dosing time
- Weight loss/Decreased appetite
 - Eat a large breakfast and dinner
 - Take after a meal
 - Add in milkshakes
- Nausea/Stomach upset
 - Take with food

Stimulant: **Common Side Effects**

- Headache
 - Try giving with food
- Irritability
- Mild increase in blood pressure/heart rate
 - Amphetamine > Methylphenidate products

Stimulant: rare and serious side effects

- Growth Suppression
 - Controversial
- Sudden cardiovascular death
 - Only in patients with underlying cardiac disease
 - Amphetamine > Methylphenidate products
- Tics
 - More likely to exacerbate a pre-existing disorder

Stimulant: **rare and serious** side effects

- Psychiatric side effects
 - More likely to exacerbate an underlying disorder
- 'Zombie-like' state
- Loss of skin color at application site (patch only)
- Abuse, Dependence and Diversion



ADHD Medications: Non-Stimulants

Non-Stimulant Medications

- Second-line treatment options for ADHD
 - Atomoxetine (Strattera®)
 - Guanfacine ER (Intuniv®)
 - Clonidine ER (Kapvay®)
- Off-label medications with good evidence
 - Guanfacine IR
 - Clonidine IR
- Other off-label options
 - Antidepressants (TCAs and Bupropion)

Atomoxetine

- Second line treatment
 - Less effective than stimulants
 - May take 2 weeks to see response
 - Generally use after failure of 2 stimulants
- Special considerations
 - Concurrent substance abuse or anxiety
 - Intolerable stimulant side effects

Atomoxetine

- Dosing based on weight
 - 0.5 mg/kg to 1.4 mg/kg (Target 1.2 mg/kg)
- May need to give twice daily

Atomoxetine Side Effects

- Common side effects: (> 10%)
 - Headache, drowsiness, insomnia, nausea, GI upset/pain, vomiting, decreased appetite, and erectile dysfunction (more in adults)
- Less common but serious side effects
 - Changes in blood pressure, irritability, jitteriness and depression
- Increased risk of suicidal ideation (very rare)
 - 0.4% vs. 0.0% for placebo

Alpha 2 Agonists

- Extended release products
 - Clonidine
 - Guanfacine
- Second line treatment
 - Less effective than stimulants
 - May take up to 2 weeks for full response

Alpha 2 Agonists

- Special considerations in using this class
 - Comorbid tic disorder
 - Concurrent substance abuse
 - Intolerable stimulant side effects
 - May not be as effective for inattentive only symptoms

Alpha 2 Agonist Side Effects (Clonidine & Guanfacine)

- Dose dependent side effects
 - Sedation
 - Often transient
 - IR >> ER and Clonidine > Guanfacine
 - Dizziness
 - Often transient
 - Hypotension and/or tachycardia
 - IR >> ER and Clonidine > Guanfacine

Alpha 2 Agonist Side Effects (Clonidine & Guanfacine)

- Withdrawal and rebound hypertension
 - Much greater risk with IR formulations, very rare for ER
- Do not take ER formulations with high-fat meals due to increased exposure

'Off Label treatments'

- Guanfacine
- Clonidine
- TCAs (such as desipramine, nortriptyline, clomipramine)
- Bupropion
 - Depression and ADHD

What if kid has comorbid psychiatric issues?

- ADHD + Tics:

1. Use stimulant first
2. ADHD better but tics continued – add alpha-2 agonist
3. Add low dose atypical antipsychotic
4. Consider neurology referral (or add low dose haloperidol)

- ADHD + Aggression:

1. Use stimulant first
2. Add behavioral intervention
3. Add atypical antipsychotic (Risperidone)

What if kid has comorbid psychiatric issues?

- ADHD + Depression:

Stabilize ADHD s/s then treat depression

1. Use stimulant first
2. If continued depression, then add SSRI

- ADHD + Anxiety:

Use stimulant and SSRI together OR Use Strattera to treat both

How a prescriber determines what medication to use

- History of response
- Family history to medication response
- Receptor profile of medication
- Drug interactions
- Dosing and dosage forms
- Monitoring/adherence issues
- Concurrent medical history
- Cost
- Treatment refractory
- Pregnancy and Lactation
- Patient preference
- Side Effects
- Efficacy

How to engage your provider/physician

- In the past the relationship between physicians and patients was paternalistic
- **Currently** the expectation is that the provider works with the patient
 - We expect questions, dialogue, and your input into the process of evaluation and decision making
- It may not be a physician--you may have a nurse practitioner, physician assistant, or resident in training that you are working with

How to engage your provider/physician (Providing information on past treatment)

- It is tremendously helpful for the provider/physician to be informed of prior treatments
- Providing documentation of past hospitalizations, outpatient treatment, medications, any medical history is critical
- This is sometimes challenging for children in custody but anything you can do to facilitate quick access to treatment history is critical

How to engage your provider/physician (be empowered to question)

- **A key component of informed consent includes:** the information needed about treatment that needs to be communicated to the guardian in order to get consent to treat
- If you are not receiving the information needed to give consent **ask for it**
- If you don't understand what is being told to you **ask questions until you do understand**

How to engage your provider/physician (ongoing feedback to them is important)

- **It is critical for ongoing treatment to have the input of those who spend time with the child.**
 - This can be the caseworker, foster parent, teacher, etc.

How to engage your provider/physician (obtain the information you need)

- Educate yourself on the treatment provided
- Be familiar with possible side effects
 - If you don't know them then ask about them
 - Be aware of possible side effects the child is experiencing so you can communicate them

How to engage your provider/physician (obtain the information you need)

- Awareness of rare and serious side effects
 - Stimulants—cardiac toxicity
 - Atomoxetine—increased risk of suicidal ideation (0.4% vs. 0.0% for placebo)
 - Bupropion—lowers seizure threshold
- Be aware of monitoring necessary for medications used
 - No blood monitoring with stimulants or non-stimulants
 - History of early/sudden cardiac death in relative is important to know



How to engage your provider/physician

- **What challenges do you face in engaging the provider/physician?**

Overview

- Three webinars
 - Antidepressants and anti-anxiety medications
 - Antipsychotics and mood stabilizers
 - Medications for ADHD Treatment
- Do you have any questions on these topics or other topics relevant to psychiatric treatment of children and adolescents?

Medication Information Resources

- American Academy of Child and Adolescent Psychiatry (AACAP) Practice Parameters
 - https://www.aacap.org/AACAP/Resources_for_Primary_Care/Practice_Parameters_and_Resource_Centers/Practice_Parameters.aspx
- National Alliance on Mental Illness (NAMI) Treatment Resources, Mental Health Medications
 - <http://www.nami.org/Learn-More/Treatment/Mental-Health-Medications>
- Psychotropic Medication Utilization Parameters for Children and Youth in Foster Care (5th Version)
 - https://www.dfps.state.tx.us/Child_Protection/Medical_Services/documents/reports/2016-03_Psychotropic_Medication_Utilization_Parameters_for_Foster_Children.pdf
 - Tables begin on page 8
- Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD.org)