

# Issues in Treatment of Children and Adolescents

Diagnosis and Treatment

# Be Careful

- A Diagnosis in Kids of Bipolar Disorder is often REALLY...
- Attention-Deficit/Hyperactivity Disorder (ADHD)- A chronic condition including attention difficulty, hyperactivity, and impulsiveness. ADHD often begins in childhood and can persist into adulthood. It may contribute to low self-esteem, troubled relationships, and difficulty at school or work. Symptoms include limited attention and hyperactivity.
- Oppositional Defiant Disorder- Symptoms generally begin before a child is eight years old. They include irritable mood, argumentative and defiant behavior, aggression, and vindictiveness that last more than six months and cause significant problems at home or school.

# Bipolar Disorder

Since the mid 1990's, the diagnosis of bipolar disorder has increased significantly; two-fold among adults, four-fold among adolescents, and forty-fold with children (Moreno et al., 2007). There is general agreement among mood-disorder experts that this has become the diagnosis du jour and most of these children do not have true bipolar disorder. According to renowned child psychiatrist John Walkup most children with emotional problems “wobble, squiggle and can't pay attention.” Mood instability is a hallmark symptom of many psychiatric disorders and does not automatically imply a diagnosis of bipolar disorder.

# Symptoms of Major Depression

## 5 or more symptoms (Adults)

- Depressed or irritable mood for more days than not
- Anhedonia (markedly diminished interest or pleasure in all or almost all activities, most days)
- Significant weight loss or gain (or failure to make expected weight gain)
- Insomnia or hypersomnia more days than not
- Psychomotor agitation or retardation nearly every day
- Fatigue more days than not
- Feelings of worthlessness or excessive guilt
- Impaired concentration
- Recurrent thoughts of death or suicide

# Additional Diagnostic Signs and Symptoms of Major Depression in Children

- Irritability
- Social withdrawal
- Anhedonia-Inability to feel pleasure
- Low Self-esteem
- Themes of death, suicide, or self-destruction appearing in play
- Vegetative symptoms (feels as sleep disturbances or poor appetite)

# Common Symptoms

- School failure
- Loneliness
- Sadness
- Low Energy
- Irritable
- Substance use
- Anger

# Associated Signs and Symptoms

- Vague, nonspecific physical complaints
- Running away from home
- Boredom
- Extreme sensitivity to rejection
- Reckless behavior, acting out
- Difficulty with relationships
- Substance use or abuse
- (Lessen the electronics/social media)

# Red Flags for Possible Bipolar Disorder

- Atypical depressive symptoms such as hypersomnia, severe fatigue, increased appetite, carbohydrate craving, weight gain
- Seasonal (winter) depression
- Psychotic symptoms (e.g., delusions)
- History of separation anxiety disorder
- History of Attention-deficit/hyperactivity disorder (ADHD) or ADHD-like symptoms
- Positive family history of bipolar disorder
- History of hypomania

# Symptoms of Disruptive Mood Dysregulation Disorder

- Frequent (3 or more a week) and severe temper outbursts, grossly out of proportion in intensity and duration
- Persistent (nearly every day) anger and irritability
- Symptoms have been present for 12 months or more
- Not diagnosed for the first time before age 6 or after age 18
- Absence of manic symptoms (and no history of manic symptoms)

# Common Disorders that Present with Mood Instability Include the Following

- Diffuse brain damage (e.g. due to fetal alcohol exposure, traumatic brain injuries, etc.)
- Anxiety disorders
- Post-traumatic stress disorder
- Situational stress
- Reactive attachment disorders
- Agitated, unipolar depression
- Impaired affect regulation as a consequence of severe early abuse or neglect
- Psychotic disorders
- Some neurodevelopmental disorders
- Substance use disorder

# Why such an increase in bipolar diagnoses?

- It is likely that more youngsters with the actual disorder are being identified and treated
- Bipolar disorder is misdiagnosed in youth (this is likely one of the main reasons that bipolar disorder is over diagnosed)
- There is a controversy and confusion among clinicians and researches regarding specific criteria making a bipolar diagnosis in children
- Standard treatments that have a positive track record with adults and older adolescents are not nearly as effective with prepubertal children

# Bipolar 1, the Patient Must have Had at Least One Manic or Mixed Episode (DIGFAST/MANIA)

- **Distractibility**
- **Impulsivity**
- **Grandiosity.** In children this often presents as an overestimation of one's own abilities, which is a change from the child's normal behavior
- **Flight of ideas**
- **Activities: Psychomotor Agitation**
- **Sleep Deficits (Decreased need for sleep)**
- **Talkativeness (Pressured speech)**
  
- **Elevated or expansive mood.**
- **In children this often presents as significantly inappropriate or exaggerated silliness**
- **Risk taking behavior**

# Bipolar II

- Meets full DSM criteria for hypomania or mania, including duration, and displays classic elevated mood or grandiosity
- Meets the DSM symptom criteria for hypomania or mania, but not duration criteria, with hypomanic episodes lasting two to three days in length
- Meets duration criteria, but episodes are characterized by instability not euphoria

# Signs and Symptoms of Early-Onset Mania

- Chronic, not episodic
- Mixed states commonly occur with marked dysphoria and irritability
- Severe oppositional behavior
- Ultrarapid cycling
- Explosive outbursts or rage episodes

# Bipolar Disorder and Attention-Deficit/hyperactivity Disorder (ADHD):

- Irritability
- Inattention
- Hyperactivity
- Impulsivity
- High level of energy
- Pressured speech
- Symptoms are chronic and non episodic

# Symptoms Common to Bipolar Disorder but Very Rare With ADHD

- Decreased need for sleep without daytime fatigue
- Intense, prolonged rage attacks (lasting 2-4 hours)
- Hypersexuality
- Flight of Ideas
- Morbid nightmares
- Psychotic symptoms
- Family history of obvious bipolar disorder or one or more of the following in blood relatives:
  - Suicide
  - Severe alcohol or drug abuse
  - Multiple marriages
  - Tendency to start numerous businesses

# Anxiety Disorders

- Most common psychiatric condition in children (5-18%)
- Causes significant academic & social impairment
- Frequently persist into Adulthood
- Comorbid with Bipolar disorder and ADHD
- Includes: Obsessive Compulsive Disorder; Panic Disorder; Social Anxiety Disorder; Phobias; Post Traumatic Stress Disorder; Separation Anxiety Disorder

# Symptoms Common with Anxiety

- Excessive Anxiety and worry for more days than not for at least 6 months
- Difficulty controlling worry
- 3 or more of the following: Restlessness/on edge; Easily fatigued; Difficulty concentrating; Irritability; Muscle tension; Sleep Disturbance
- Symptoms cause distress or impairment in social or other important areas of functioning
- Symptoms are not due to substance abuse or medical conditions

# Obsessive-Compulsive Disorder – Presence of Obsessions and/or Compulsion

- Recurrent and persistent thoughts, urges or images that are intrusive, unwanted, and generally cause marked anxiety or distress.
- Attempts to ignore / suppress thoughts, urges, or images, or to neutralize them with some thought or action (i.e., by performing a compulsion).
- The obsessions or compulsions are time consuming (> 1hr daily) or cause clinically significant distress or impairment.
- Good/Fair Insight: recognize behavior and lack of validity.
- Poor Insight: Behavior & beliefs are probably true.
- Absent Insight: Believe behavior and beliefs are true.

# Panic Disorders

- A discrete period of intense fear or discomfort, in which four or more of the following symptoms developed abruptly and reached a peak within 10 minutes:
  - Palpitations, pounding heart, or accelerated heart rate
  - Sweating
  - Trembling or shaking
  - Sensations of shortness of breath or smothering
  - Feeling of choking
  - Chest pain or discomfort
  - Nausea or abdominal distress
  - Feeling dizzy, unsteady, lightheaded, or faint
  - Derealization (feelings of unreality) or depersonalization (being detached from oneself)
  - Fear of losing control or “going crazy”
  - Fear of dying
  - Paresthesia (numbness or tingling sensation)
  - Chills or hot flushes.

# Social Anxiety Disorder

- Marked fear or anxiety about social situations where the individual is exposed to possible scrutiny by others.
- In children, the anxiety must occur in peer groups and is out of proportion to the actual threat
- Fears that they will act in a way or show anxiety symptoms that will be negatively evaluated.
- Maybe expressed in crying, tantrums, freezing, clinging, shrinking, or failing to speak in social situations.
- Social situations cause great fear and can lead to avoidance and impairment.
- Last longer than 6 months

# Phobias

- A specific phobia is an intense, persistent, irrational fear of a specific object, situation, or activity, or person. Usually, the fear is proportionally greater than the actual danger or threat.
  - Provokes immediate fear or anxiety
  - Object or situation is actively avoided or endured with intense fear or anxiety
  - Impairment in social and other areas of functioning
- **acrophobia, fear of heights.**
- **aerophobia, fear of flying.**
- **arachnophobia, fear of spiders.**
- **astraphobia, fear of thunder and lightning.**
- **autophobia, fear of being alone.**
- **claustrophobia, fear of confined or crowded spaces.**
- **hemophobia, fear of blood.**
- **hydrophobia, fear of water.**

# Post-Traumatic Stress Disorder

- Exposure to actual or threatened death, serious injury, or sexual violence in one (or more) of the following ways:
  - Directly experiencing traumatic event(s).
  - Witnessing in person, the event(s) as it occurred to others.
  - Learning of traumatic event(s) occurred to a close individual.
  - Repeated or extreme exposure to aversive details of the traumatic event(s).

# PTSD Symptoms:

- vivid [flashbacks](#) (feeling like the trauma is happening right now)
- intrusive thoughts or images
- nightmares
- intense distress at real or symbolic reminders of the trauma
- physical sensations such as pain, sweating, nausea or trembling.
- avoiding anything that reminds you of the trauma
- being unable to remember details of what happened
- feeling emotionally numb or cut off from your feelings
- feeling physically numb or detached from your body
- being unable to express affection
- doing things that could be self-destructive or reckless
- [using alcohol or drugs](#) to avoid memories.

# Separation Anxiety Disorder

- Developmentally inappropriate & excessive fear or anxiety concerning separation from those to whom the individual is attached, as evidenced by at least three of the following:
  - When anticipating or experiencing separation from home or from major attachment figures.
  - About losing major attachment figures or about possible harm to them, such as illness, injury, disasters, or death.
  - About experiencing an untoward event (e.g., getting lost, being kidnapped, having an accident, becoming ill) that causes separation from a major attachment figure.
  - Persistent reluctance or refusal to go out, away from home, to school, to work, or elsewhere because of fear of separation or to be alone or sleep away from home without being near major attachment figure.

# Attention-Deficit/Hyperactivity Disorder

- Affects approximately 5 to 7 percent of children.
- As they mature neurologically, most teenagers with ADHD experience a noticeable reduction in motoric restlessness or hyperactivity, but the core symptoms of ADHD (impulsivity, impaired attention, and lack of intrinsic motivation) continue into adulthood.
- Most experts agree that about 40 percent of children with ADHD completely outgrow the disorder by early adulthood (likely due to the ongoing maturation of the prefrontal lobes).
- 60 percent experience ongoing symptoms throughout life

# Differential Diagnosis of Childhood-Onset Psychiatric Disorders Presenting with ADHD

- Diffuse brain damage (such as that commonly seen in fetal alcohol syndrome, following a head injury, and so on).
- Anxiety Disorders
- Agitated depression
- Attachment disorders
- Situational stress Post-traumatic stress disorder
- Bipolar mania or hypomania
- Pre-psychotic conditions
- Impaired affect regulation with severe early abuse or neglect
- Substance use disorders
- Boredom (especially likely in bright children who are academically under-stimulated)

# Autism Spectrum Disorder

- Significant impairment in social interactions and communications
  - Impairment in the use of nonverbal behaviors such as facial expression
  - Failure to develop peer relationships appropriate to age
  - A lack of spontaneous seeking to share interests with others
  - Delayed or absent development of spoken language
  - In individuals with adequate speech, impaired ability to converse with others
  - Use of language in stereotyped or idiosyncratic ways
  - Lack of make-believe play or imitative play appropriate to age
- Patterns of interests and activities:
  - Intense preoccupation with one or more stereotyped and restricted patterns of interest
  - Rigid adherence to nonfunctional routines or rituals
  - Stereotyped and repetitive motor mannerisms
  - Intense preoccupation with parts of objects

# Autism Spectrum Disorders – Asperger's

- Impairment in social relationships and repetitive and stereotyped patterns of behavior, but minimal delay in language development.
- People with Asperger's are interested in social relationships but are socially clumsy and insensitive.
- Distinguishing between high-functioning autism and Asperger's can be difficult.

# Asperger's Disorder Diagnostic Features

- Qualitative impairment in social interaction with 2 of the following:
  - Impairment in the use of nonverbal behaviors such as expression.
  - Failure to develop peer **relationships** appropriate to age.
  - Lack of spontaneous seeking to share interests with other people.
  - Lack of social or emotional reciprocity.
- Stereotyped patterns of interests and activities as shown by the following:
  - Intense preoccupation with one or more stereotyped and restricted patterns of interest
  - **Rigid** adherence to nonfunctional routines or ritual
  - Stereotyped and repetitive motor mannerisms
  - Clinically significant impairment in social occupational, or other important areas of functioning.
- \* NO Significant delay in language is seen.

# Autism Spectrum Disorders – Rett's

- A condition characterized by its developmental course and development of neurological & behavioral symptoms.
- Predominately seen in **females**.
- All experience:
  - Apparently normal prenatal and perinatal development,
  - Apparently normal psychomotor development through the first 5 months after birth.
  - Normal head circumference at birth.
- After period of normal development:
  - Reduced head growth between 5 – 48 months
  - Loss of previously developed hand skills between 5 and 30 months
  - Loss of social engagement
  - Development of poorly coordinated gait or trunk movements.
  - Severely impaired language development.

# Autism Spectrum Disorders - Childhood Disintegrative Disorder (Heller's Syndrome)

- Normal Development until at least 3 or 4 years.
- Deteriorate over a period of weeks or months,
- Significant loss of language ability, social skills, intellectual functioning, and bowel or bladder control.
- After a period of deterioration, they stabilize and do not show further loss of function
- Predominantly seen in **Males**.

# Autism Spectrum Disorders - Reactive Attachment

- Disorder of infancy or childhood.
- Not considered to be a neurodevelopmental disorder.
- Presumed developed as a response to early neglect.
- Withdrawal from caregivers
- Little expression of positive feeling
- Unexplained intense emotional reactions such as irritability, sadness, or fearfulness
- Rarely seek protection or comfort from caregivers

# PSYCHOPHARMACOLOGY

Treatment for children and Adolescents

# Antidepressants -SSRI

Generic Name	Brand Name (mg)	Starting Daily Dose (mg)	Daily Dose	Daily Dose (weight adj, mg/kg)
Fluoxetine	Prozac Sarafem	C: 5 A: 10	5- 40 10-60	0.25- 0.75
Sertraline	Zoloft	C: 25 A: 50	25-200 50-200	1.5-3
Paroxetine	Paxil	C:5 A: 10	10-30 20-50	.25-.75
Citalopram	Celexa	C: 10 A:10	10-40	0.25-0.75
Escitalopram	Lexapro	C: 5 A:5	5: 20 5: 20	0.125-0.375
Fluvoxamine	Luvox	C: 25 A: 25-50	25-200	1.5-4.5

# Antidepressants – SNRI; NRI

Generic Name	Brand Name (mg)	Starting Daily Dose (mg)	Daily Dose	Daily Dose (weight adj, mg/kg)
Venlafaxine XR	Effexor XR	C: 25 A: 25 – 37.5	12.5- 37.5 25-75+	1-2
Desvenlafaxine	Pristiq	C: Not Established A: 50	Not Established	Not Established
Duloxetine	Cymbalta	C:Not Established A: 10	Not Established 500-300	1
Levomilnacipran	Fetzima	C: Not Established A:20	Not Established	1
<b>NRI</b>				
Atomoxetine	Strattera	C: 10 A: 40	10-60 40-100	1.2-1.8

# Antidepressants – NDRI; Atypical

Generic Name	Brand Name (mg)	Starting Daily Dose (mg)	Daily Dose	Daily Dose (weight adj, mg/kg)
Bupropion SR	Wellbutrin SR	C: 100 A: 100	50-150 150-300	3-6
<b>Atypical</b>				
Mirtazapine	Remeron	C: 7.5 A: 15	50-30 15-45	Not Established
Trazodone	Desyrel	C: 25 A: 50	25-75 25-100	1 -3
Vortioxetine	Brintellix	C: Not Established A: 10	Not Established 10-20	1.2-1.8

# Mood Stabilizers

- LITHIUM- “The Gold Standard”
- This is an established mood stabilizer, with a 50-80% response rate for bipolar I disorder in adults and adolescents.
- Positive outcomes with lithium in preadolescent bipolar patients are considerably lower.
- Lithium is approved by the FDA in children from **12-18 years of age**. In adolescent's lithium is a first-line agent indicated for bipolar mania, bipolar depression, and prophylaxis.
- **Lithium has unique features in its ability to significantly reduce suicide.** This is important since bipolar disorder is associated with a very high rate of suicide.

# Side Effects of Lithium

- Increased thirst
- Increased urination
- Possible nausea or vomiting
- Diarrhea, headache, tremors, weight gain, and worsening of acne
- Shaking

# More Serious Side Effects of Lithium

- Changes in Kidney Function
  - Hypothyroidism
  - Cardiac conduction abnormalities
  - Increased White Blood Cell Count
- 
- **This is why the use of Lithium requires ongoing medical and blood tests**

# Divalproex (Depakote)/Carbamazepine(Tegretol)

- Divalproex - is a first-line agent for mania and considered to be the preferred drug for mixed episodes in adults and adolescents.
- Carbamazepine - is a second-line medication for mania.

# Lamotrigine (Lamictal)

- This is another first-line agent for bipolar depression in adolescents and adults
- Common side effects include nausea, vomiting, constipation, ataxia, and skin rash
- A serious side effect associated with Lamictal would be Stevens-Johnson syndrome

# Antipsychotic Medications (Weight Gain)

- Quetiapine (Seroquel)
- Olanzapine (Zyprexa)
- Aripiprazole (Abilify)
- Risperidone (Risperdal)
- Lurasidone (Latuda)

**Vraylar- Great drug but new**

# Lithium

Generic Name		Starting Daily Dose	Daily Dose	Side Effects
Lithium		C: 15-30mg/Kg A: 600-1800 mg	3-4 Divided doses 3-4 Divided doses	Sedation, thirst, GI intolerance, tremor, weight gain in 30-40% of patients, hypothyroidism, increased urination, EKG changes

# Divalproex (Depakote)

Generic Name		Starting Daily Dose	Daily Dose	Side Effects
Depakote		C/A:10-60mg/kg in	2-3 divided doses	Sedation, dizziness, drowsiness, blurred vision, GI intolerance, hair loss, tremors

# Lamotrigine (Lamictal)

Generic Name		Starting Daily Dose	Daily Dose	Side Effects
Lamictal		C: Do not use in Children/ As it may cause Stevens-Johnson syndrome A: Start at no more than 25mg/Day with gradual titration after 2 weeks		Dizziness, headache, double vision, vomiting, and benign rash.  Rare: Stevens-Johnson syndrome

# Carbamazepine (Tegretol)

Generic Name		Starting Daily Dose	Daily Dose	Side Effects
Tegretol		C:10-20mg/kg A:400-800mg	3-4 divided doses 2-3 divided doses	Sedation, dizziness, blurred vision, lack of coordination

# ANXIETY MEDICATIONS

Best treatment for Obsessive-Compulsive Disorder (OCD).

-**clomipramine (Anafranil)**, a TCA is also highly effective in treating OCD.

-**Exposure Therapy**

**First line treatment includes: Prozac, Luvox, Zoloft, Celexa, Lexapro**

# Anxiety Medications

Time Course	Symptom Reduction
6-10 Weeks 18-24 Weeks 52 Weeks or more	25-30% Reduction 40-50% Reduction 50% or More

In general, doses used to treat OCD are higher than those needed to treat depression.

Generic Name	Brand Name	Initial Dose	Daily Dose
Citalopram	Celexa	C/A: 10mg	C/A: 10-60mg
Clomipramine	Anafranil	C/A: 25mg	C/A: 200mg or 3mg/kg whichever is lower
Fluvoxamine	Luvox	C/A: 25mg at bedtime	C/A: 50-200mg (higher doses divided)
Fluoxetine	Prozac	C/A: 10mg Daily	C: 10mg Also higher weight children 20mg
Sertraline	Zoloft	C: 25mg daily A: 50mg daily	C: 25-200mg A: 50-200mg

# Stimulants

The mechanism of action of stimulants is inhibition of dopamine reuptake. These medications also increase the availability of norepinephrine in the frontal lobes.

# IMMEDIATE-RELEASE STIMULANTS

Generic Name	Brand Name	Typical Daily Dose (mg)
Methylphenidate	Ritalin	10-60mg
	Metadate	10-60mg
	Methyl in	10-60mg
Dexmethylphenidate	Focalin	5-20mg
Dextroamphetamine	Dexedrine	5-40mg

Generic Name	Brand Name	Typical Daily Dose (mg)
Lisdexamfetamine	Vyvanse	30-60mg
Amphetamine	Adderall	5-40mg

# Sustained-Release Stimulants

Generic Name	Brand Name	Typical Daily Dose (mg)
Methylphenidate	Ritalin SR Ritalin LA Metadate ER Concerta Quillivant XR	20-60mg 20-60mg 10-60mg 18-54mg 10-60mg
Dexmethylphenidate	Focalin XR	5-30mg
Amphetamine	Adderall XR	5-40mg

# ALPHA-2 ADRENERGIC AGONISTS

Generic Name	Brand	Typical Dose
Clonidine	Catapres	0.15-0.4mg 3-4 times a day
	Kapvay	0.15-0.4mg
Guanfacine	Tenex	0.25-3.0mg 2-3 times a day
	Intuniv	0.25-3.0mg

# ANTIDEPRESSANTS USED TO TREAT ADHD

Generic Name	Brand Name	Typical Daily Dose
Bupropion	Wellbutrin SR/LA	C: 100-150mg A: 150-300mg
Atomoxetine	Strattera	1.2-1.8mg/kg (same for children and adolescents)

# Pervasive Neurodevelopmental Disorders- delayed development in social and communication

## **Serotonin Medications:**

Include antidepressants, SSRI's, and clomipramine. These medications are often helpful in reducing aggression, agitation, ritualistic behavior, and anxiety.

## **Antipsychotics:**

Can be helpful in reducing aggression and agitation and improving social relatedness. Risperdal has been shown to improve social related, repetitive thoughts, and behavior.

## **Beta-Blockers and Alpha-2 Agonist:**

Reduce aggression, impulsivity, and self-injurious behaviors.

# Pervasive Neurodevelopmental Disorders- delayed development in social and communication

- **Stimulants:**

They should be used only when the child has a generalized problem with distractibility, and not when the distraction is due to preoccupation.

## **Opioid Antagonists:**

The use of **naltrexone**, an opiate blocker, can be effective in reducing restlessness and improve focus.