

Treatment of Anxiety and Depression in the Pediatric Patient

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- I do not have any relevant financial interests with any entity producing, marketing, re-selling or distributing health care goods or services consumed by or used on patients, this does not include provision of clinical services directly to patients
- During this presentation there will occasionally be discussions of unapproved uses of FDA approved drugs, devices or treatments

Objectives

Identify common anxiety disorders in pediatric patients

Recognize common presentations of depression in pediatric patients and how they differ from adults

Discuss pharmacological interventions for treating anxiety and depression in pediatric patients



Pediatric Anxiety

Internalizing disorder=thoughts & feelings

- Developmentally inappropriate or excessive anxiety and impairs functioning
 - 20% lifetime prevalence
 - An estimated 31.9% of adolescents had any anxiety disorder
 - Of adolescents with any anxiety disorder, an estimated 8.3% had severe impairment
 - The prevalence of any anxiety disorder among adolescents was higher for females (38.0%) than for males (26.1%)
 - The prevalence of any anxiety disorder was similar across age groups
- Conditions that Mimic Anxiety
 - Other psychiatric disorders
 - Hyperthyroidism
 - Substance use disorder
 - Heavy metal toxicity
 - Asthma
 - Headache and CNS syndromes
 - Cardiac disorders

Anxiety Primary Risk Factors

- ✓ Trauma
- ✓ Serious illness or health conditions
- ✓ Stress
- ✓ Temperament
- ✓ Comorbid mental health disorders
- ✓ Family history
- ✓ Substance abuse

Pediatric Anxiety

❖ Generalized Anxiety/Anxiety, NOS

- Anxiety DO Unspecified (symptoms do not meet full criteria for any anxiety DO-no specific reason)
- Other Anxiety DO (specify reason why criteria is not met -e.g. time element)

❖ Adjustment Disorders

❖ Separation Anxiety

❖ School Avoidance

Generalized Anxiety

A. Anxiety/worry/apprehension more days than not

B. Anxiety is difficult to control

C. Anxiety/worry associated with **1 (adults 3) or more** of the following more days than not and > 6 months:

- Restless/keyed up/on edge
- Easily fatigued
- Difficulty concentrating/mind goes blank (grades)
- Irritability/anger
- Muscle tension
- Sleep disturbance

D. Anxiety causes clinically significant distress/impairment

E. Not attributable to substance or another medical condition (e.g. hyperthyroidism)

F. Not better explained by another disorder (fear of panic attack in panic DO, contamination fear in OCD, reminders of trauma in PTS, etc.)

❖ Treated with SSRIs, preferably ones w/longer ½ life but go very low and slowly as you can easily make them more agitated*

❖ Do not use BZDs

Adjustment Disorders

Cause is usually a life stressor such as:

- Witnessing parent/parental figure ill, receive treatment
- Parents/parental figure deploys, move out, separate, divorce, remarry
- Family financial stress
- Homelessness
- Parent incarcerated
- Grandparent moved in
- Blended family issues like step-siblings
- Teacher on long term leave



Adjustment Disorder

A. Development of emotional and/or behavioral symptoms in response to an identifiable stressor occurring w/in 3 months of the stressor

B. Symptoms are clinically significant AEB one or both below:

- 1. marked distress that is out of proportion to the stressor (external context, cultural factors taken into account)
- 2. causing significant impairment in functioning

C. Stress-related disturbance does not meet criteria for another disorder and is not an exacerbation of another disorder

D. Symptoms are not normal bereavement

E. Once the stressor is over the symptoms resolve w/in 6 months

Specifiers: w/depressed mood, w/anxiety, w/mixed anxiety & depressed mood, w/disturbance of conduct, w/mixed disturbance of emotions and conduct, unspecified.
Acute/persistent=>or < 6 mo.

- Usually treated with CBT in individual therapy, family therapy or peer group therapy
- Medications have limited value in treating adjustment disorders

Separation Anxiety Disorder

A. Developmentally inappropriate/excessive fear/anxiety about separating from whom the individual is attached

- Recurrent excessive distress w/anticipating or experiencing separation from major attachment figures
- Persistent worry about losing the attachment figure (illness, injury, disaster, death, storms)
- Persistent worry about untoward event (lost, kidnapped, accident, becoming ill) causing separation from attachment figure
- Refusal to leave home w/o attachment figure
- Refusal to sleep elsewhere
- Nightmares w/separation theme
- Somatic complaints

B. Fear/anxiety/avoidance lasts **at least 4 weeks in children** (6 months or > in adults)

C. Causes clinically significant distress or impairment (e.g. social, academic, occupational areas)

D. Not better explained by another disorder (e.g. resistance to change in ASD, delusions/hallucinations in psychotic DO, refusal to leave house in agoraphobia)

Separation Anxiety Disorder

Doesn't want to separate to go to school or day care

Won't want to let the parent out of their sight/calls if gone

Follow parent around-even to the bathroom

Refuse to go to bed at night or won't sleep in their own room/bed

- Counseling to address the underlying issue(s) preferable to medication
- In severe cases may use SSRIs or alpha-2 agonists.



*"She's suffering from separation anxiety.
I grounded her from her phone for
10 minutes."*

School Avoidance, School Refusal

Child refuses to go to school on a regular basis or won't stay in school

Occurs in approximately 2 to 5 percent of school-age children

Happens usually between ages 5-6 and between 10-11, and at times of transition, such as entering middle and high school-and HS/college graduation

Often complain of somatic symptoms such as: headaches, stomachaches, nausea, or diarrhea and symptoms go away if allowed to stay home

May exhibit tantrum behavior, inflexibility, avoidance, and defiant behavior

Tend to have average or above-average intelligence

May develop serious educational or social problems if away from school and friends for any length of time

Evaluate, look for triggers such as bullying

Indicative of a bigger problem

Common occurrence in boys who stay up all night & play video games then refuse to get up & go to school

If not addressed it will become a bigger problem

Anxiety and Depression Association of America

<https://adaa.org/living-with-anxiety/children/school-refusal#>

➤ Therapy most effective treatment

Medication for Treatment of Anxiety

GAD-

- citalopram
 - (7-17 yo) 10-40 mg qd; start 5-10 mg qd-increase by 5 mg/d q2-4wk; max 40 mg (max 20 mg in poor CYP2C19 metabolizers)-taper
- venlafaxine XR
 - (7-17 yo) 75-225-mg qd; start 37.5 mg qd-increase 37.5 mg/d q4-7d; give with food; taper by no > 75 mg/wk
- duloxetine
 - (7-17 yo) 30-60 mg qd; start 30 mg qd-increase after 2 weeks; max 120 mg qd; taper gradually

Social Anxiety DO

- paroxetine
 - (8-17 yo) 10-40 mg qam-increase by 10 mg q 1-2 wk; max 50 mg/day-taper gradually
- fluoxetine
 - (5+) 20-60 mg qd; start 5 mg qd-increase by 10 mg/d x1 wk ->10 mg x1 wk-> 20mg/d x1 wk; max 60 mg/d in lower wt pts; taper gradually > 20 mg especially
- escitalopram
 - (10-17 yo) 10 mg/day; start 5 mg qd and increase by 5 mg/d qwk; max 20 mg/d-taper to dc

Medication for Treatment of Anxiety

PTSD

- fluoxetine
 - (7-17 yo) 20-60 mg qd; start 10 mg qd-increase by 10 mg/d q 14d; max 20-30 mg/d in lower wt pts; taper gradually > 20 mg qd especially
- propranolol (non-selective beta blocker)
 - (C/A up to 17 yo) 0.5mg/kg – usual dose 2-4mg/kg/d in divided doses. NTE 16 mg/kg/d. Taper. Contraindicated in asthma, CVD, hyperthyroidism, etc. (Green, 2001)

Medication for Treatment of Anxiety

OCD

- sertraline
 - (6-12 yo) 25-200 mg qd; start 25 mg qd-increase by 25-50 mg/d qwk; max 200 mg qd; taper to dc
 - (13-17 yo) 50-200 mg qd; start 50 mg qd-increase by 25-50 mg/d qwk; max 200 mg qd; taper to dc
- fluoxetine
 - (7-17 yo) 20-60 mg qd; start 10 mg qd-increase by 10 mg/d q 14d; max 20-30 mg/d in lower wt pts; taper gradually > 20 mg qd especially
- paroxetine (not for pre-adolescents typically)
 - (7-17 yo) 10-60 mg; start 10 mg-increase by 10 mg/d q1-2 wk; max 60 mg/day-taper
- citalopram
 - (7-12 yo) 10-60 mg qd; start 2.5-10 mg qd-increase by 5mg/d q3wk; max 60 mg (max 20 mg in poor CYP2C19 metabolizers)-taper
 - (13+) 10-60 mg qd; start 10-20 mg qd-increase by 10mg/d q3wk; max 60 mg (max 20 mg in poor CYP2C19 metabolizers)-taper

Trintellix, Viibryd, Fetzima are not indicated in treatment of anxiety disorders in C/A

Other Medications for Treatment of Anxiety

- clonidine (ADHD)
 - XR-(6-17 yo) 0.1-0.4 mg/d divided qd-bid, start 0.1 qhs increase by 0.1 mg/d max 0.4 mg; taper gradually
 - IR (27-40.5 kg) 0.003-0.005 mg/kg/d divided tid-qid, start 0.05 mg hs and increase by 0.05 mg qwk; max 0.2 mg/d; taper gradually
 - IR (40.5-45 kg) 0.003-0.005 mg/kg/d divided tid-qid, start 0.05 mg hs and increase by 0.05 mg qwk; max 0.3 mg/d
 - IR (>45 kg) 0.003-0.005 mg/kg/d divided tid-qid, start 0.1 mg hs and increase by 0.1 mg qwk; max 0.4 mg/d
- guanfacine (ADHD)
 - (Up to 11 yo) Not recommended but 0.5 mg/day titrate by 0.5 mg q 3-4d NTE 2 mg/d
 - (>12 yo) start 1 mg qhs NTE 4 mg/d
- imipramine (depression, ADHD, enuresis, separation anxiety, sleepwalking)
 - (6-11 yo) start 25 mg hs or 0.5 mg/kg/d; max 50 mg, or 10 mg hs and increase by 10 mg qwk to max 50 mg

Other Medications for Treatment of Anxiety

- hydroxyzine
 - (<6 yo) titrated individually but NTE 50 mg/d. Dosed qid
 - (>6 yo) titrated individually but NTE 100 mg/d. Dosed tid-qid
- diphenhydramine
 - (2-11 yo) 1-2 mg/kg q 6h prn
 - (>12 yo) 25-50 mg q 6h prn
- buspirone
 - (6-17 yo) 15-60 mg/d divided bid-tid; max 60 mg/d
- clomipramine
 - (10-17 yo...<9 yo-not recommended) start 25 mg; increase to total dose of 100 mg/d or 3mg/kg/d, whichever is less over 1st 2 wks then then may increase to max 200 mg/d or 3mg/kg/d, whichever is less

Pediatric Depression

Internalizing disorder=thoughts & feelings

- Prevalence
 - children 2% (male : female 1:1)
 - teens 4-8% (male : female 1:2)
 - life time prevalence: 20%
- Leading cause of disability in youth
- Primary risk factors:
 - Parental depression
 - Co-morbid anxiety
 - Temperament
 - Negative cognitions
 - Chronic or intense stress
 - Family conflict
 - Poor health

Pediatric Major Depressive Disorder

A. Five or more symptoms and (1) depressed mood > 2 weeks & marked change or (2) loss of interest/pleasure

- 1) Depressed mood most of the time, in **children/adolescents mood can be irritable/angry/moody**
- 2) Decreased interest
- 3) Unintentional weight loss/gain (> 5% of BW) and decrease/increase in appetite
- 4) Insomnia or hypersomnia
- 5) Psychomotor retardation or agitation (observable not subjective)
- 6) Fatigue

Pediatric Major Depressive Disorder

- 7) Low self-worth
- 8) Difficulty thinking (decreased concentration, indecisive)
- 9) Recurrent thoughts of death (not just fear of dying), recurrent SI w/o plan, suicide gesture, or a specific plan to commit suicide

B. Symptoms cause clinically significant distress or impairment in social, occupational or other important areas of functioning

C. Episode is not attributable to physiological effects of a substance or another medical condition

Specifiers: w/anxious distress, w/mixed features, w/atypical features, w/mood (in)congruent psychotic features, w/catatonia, w/postpartum onset, w/seasonal pattern (recurrent only)

Presentations of Depression in Children and Adolescents Compared to Adults

CHILDREN

- Irritable, cranky
- Boredom, loss of interest in sports, video games and favorite activities
- Failure to gain weight as expected, overeating and weight gain especially in teens
- Changes in sleep patterns, DFA/SA, refusal to wake for school; early am awakening

ADULTS

- Depressed mood most of the day
- Decreased interest/enjoyment in once favorite activities
- Significant weight gain or loss
- Insomnia/hypersomnia

Presentations of Depression in Children and Adolescents Compared to Adults

CHILDREN

- Difficulty sitting still, pacing or very slowed down, little spontaneous movement
- Persistently tired, feels lazy
- Self critical; self-blaming, “no one likes me” feels stupid
- Decline in school performance d/t frequent absences amotivational, decreased concentration

ADULTS

- Psychomotor agitation/retardation
- Fatigue or loss of energy
- Low self-esteem; feelings of guilt
- Decreased concentration; indecisive
- Frequent suicidal ideation or behavior

Persistent Depressive Disorder

(Dysthymia)

- A. Depressed or irritable mood for 1 year for children/adolescents (2 years for adults)
- B. Two or more of: poor or over eating, insomnia or hypersomnia, low energy or fatigue, low self esteem, poor concentration/indecisiveness, hopelessness
- C. Never been w/o symptoms during the 1 year period
- D. Criteria for a MDD may be continuous for 2 years
- E. Never been manic/cyclothymic
- F. Not schizophrenia, schizoaffective, delusional, psychotic DO
- G. Not attributable to effects of a substance or another medical condition (e.g. hypothyroidism)

Specifiers: w/anxious distress, with mixed features, w/melancholic features, w/atypical features, with mood (in)congruent psychotic features, w/peripartum onset, etc.

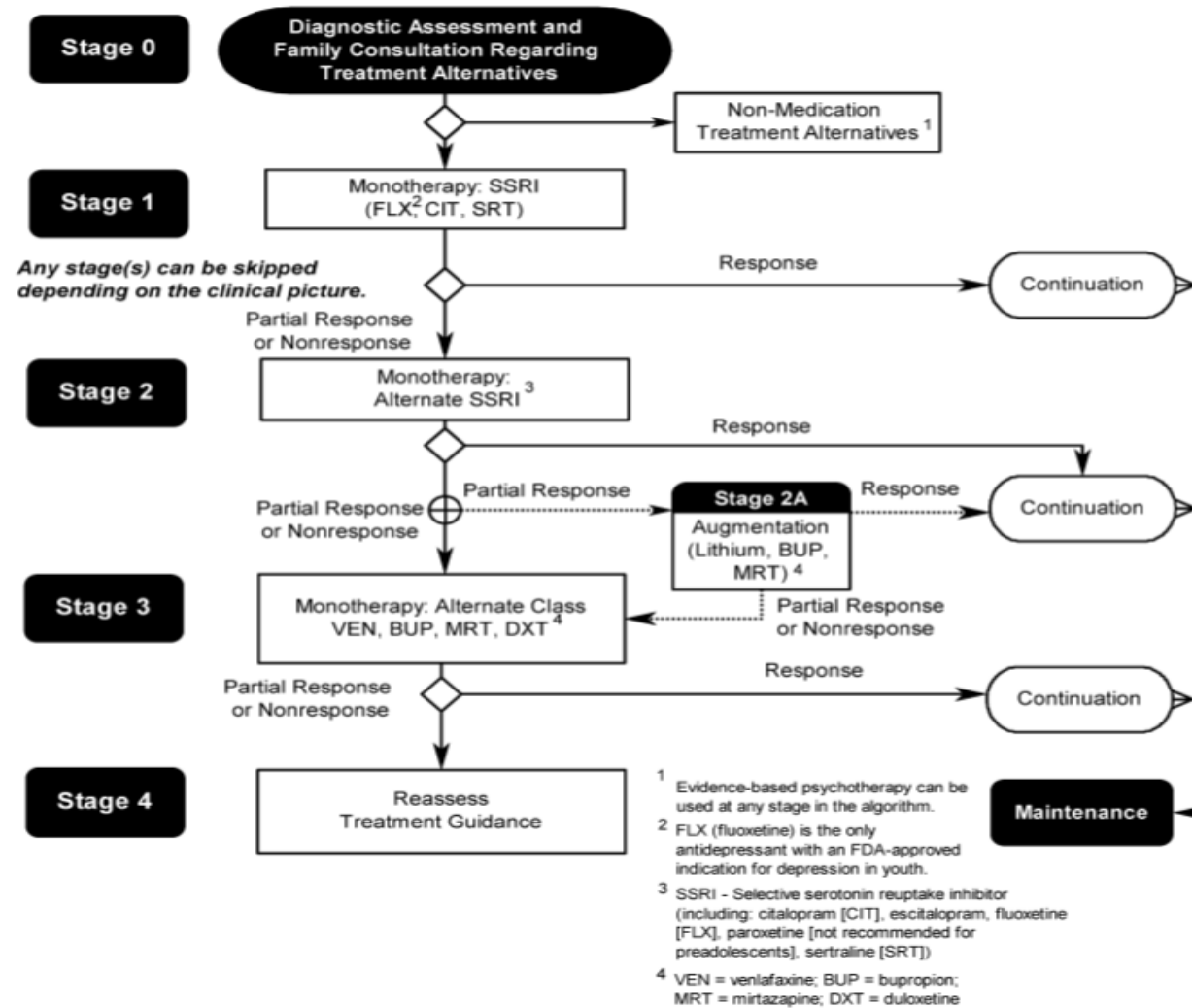


Fig. 1 Medication algorithm for treating children and adolescents who meet *DSM-IV* criteria for major depressive disorder. FDA = U.S. Food and Drug Administration. Revised based on Hughes et al. (1999). (This algorithm is in the public domain and may be used and reprinted without special permission. The authors appreciate proper citation. The authors bear no responsibility for the use of these guidelines by third parties.)

Medication for Treatment of Depression

MDD

- Fluoxetine
 - (8-18 yo) 10-20-mg qd; start 10 mg qd x1 wk slower titration in lower wt pts; taper gradually to dc
- Sertraline
 - (6-12 yo) 25-200 mg qd; start 12.5 mg-25 mg qd-increase by 25 mg/d qwk; max 200 mg/d taper
 - (13+) 25-200 mg qd; start 25 mg-50 mg qd-increase by 50 mg/d qwk; max 200 mg/d taper
- Citalopram
 - (7-11 yo) 10—20 mg qd-start 10 mg increase by 5 mg/day q2wk; max 40 mg/d
 - (12+ yo) 20-40 mg qd-start 20 mg qd, increase by 10 mg/day q2wk; max 40 mg/d

Medication for Treatment of Depression

MDD

- duloxetine
 - (7-17 yo) 30-60 mg qd; start 30 mg qd-increase after 2 weeks; max 120 mg qd; taper gradually
- venlafaxine XR
 - (7-17 yo) 37.5-225-mg qd; start 37.5 mg qd-increase 37.5 mg/d q4-7d; give with food; taper by no > 75mg/wk
- escitalopram
 - (7-11 yo) 10 mg/day; start 5 mg qd and increase by to 10 mg/d after 3 wk; max 20 mg/d-taper to dc
 - (12-17 yo) 10 mg/day; start 10 mg qd and increase dose after 3 wk; max 20 mg/d-taper to dc

Trintellix, Viibryd, Fetzima are not indicated in treatment of depression in C/A

STAR*D

Sequenced Treatment Alternatives to Relieve Depression National Institute of Mental Health 2006

- Treatment of depression where 1st AD was inadequate
- Aimed to be more generalizable to everyday practice
- Minimal exclusions
- 4 Levels-moved up if they did not achieve remission
- Only 30% achieved remission
- Depression takes much longer than we've been led to believe to treat
- No statistically significant differences in medications

SIGECAPS

Depressed or irritable mood; 5/9 SX; \geq 2 weeks

S – Sleep changes

I – Loss of interest or pleasure (anhedonia)

G – Guilt / hopelessness

E – Low self-esteem

C – Poor concentration

A – Appetite change

P – Psychomotor change

S - Suicidal ideation / thoughts of death

SAD PERSONS

Screening for Suicide Risk

SAD PERSONS & Family History

S – Sex (Females attempt more but males* complete)

A – Age over 16*

D – Depression

P – Previous attempts*

E – Ethanol abuse

R – Rational thinking is lost*

S – Social supports lacking*

O – Organized plan*

N – No significant other

S – Sickness (stressors)

First degree relative of a completer*

* designates critical items

Tools

Beck Depression Scale

Self-Report for Childhood Anxiety Related Disorders (SCARED; ≥ 25 is clinical threshold)

Beck Anxiety Scale

Vanderbilt for parents and teachers-anxiety, ODD/CD, subscale questions

Yale-Brown Obsessive Compulsive Scale (Y-BOCS)

Severity Measure for Generalized Anxiety Disorder—Child Age 11–17 (emerging measure-can be reproduced without permission by researchers and by clinicians for use with their patients.)

Connors Scale

Statistics

Iowa Mental and Emotional Well-Being Profile from the National Survey of Children's Health. NSCH 2007.

Prevalence		Iowa	US
Overall	% 2-17 yo w/≥ 1 emotional, behavioral, or developmental conditions	10.6	11.3
By age	Age 6-11 years	13.1	12.1
	Age 12-17 years	13.6	14.9
By sex	Male	12.0	14.5
	Female	9.2	7.9
% age 2-17w/≥ 2 emotional, behavioral, or developmental conditions		43.7	40.3

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