Taking the Worry out of Pediatric Anxiety Evaluation and Management

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Topics for Review

• Basics
• Pathophysiology
• Epidemiology
• Clinical Presentation
• Diagnostic Criteria
• Assessment and Screening
• Treatment
• Special Considerations

GOALS & OBJECTIVES

• Develop understanding of how to identify and evaluate anxiety in the pediatric patient and develop a differential diagnosis for the anxious child.
• Apply current evidence-base in the non-pharmacologic and pharmacologic management of anxiety in the pediatric patient.
Basics of Anxiety

• Anxiety: feeling state consisting of physical, emotional and behavioral responses to perceived threat
• Poor recognition and treatment
• Fears and worries common in normally developing children
  – Distinguish normal from abnormal

Basics of Anxiety

• Worries and fears can be protective in moderation

Basics of Anxiety

Are these worries adaptive or maladaptive?
  – Developmentally appropriate?
  – Severity?
  – Level of impairment?
  – Ability to cope with underlying stressors?
Basics of Anxiety

• Temperamental factors
• Must understand childhood development
  – Infant
  – Toddlers
  – Preschool
  – School age
  – Adolescent

Basics of Anxiety

• Anxiety becomes a disorder when...
  – Increased intensity/duration than expected
  – Impairment or disability
  – Disruption of daily activities
  – Clinically significant unexplained physical symptoms or intrusive thoughts

Anxiety = \[
\text{Likelihood} \times \text{Harm} \over \text{Ability to cope}
\]
Pathophysiology

- Genetics
- Neurobiology
- Behavioral inhibition
- Learned behavior
- Attachment

Pathophysiology: Genetics

- Thousands of genes
  - Altered development or functioning of neurotransmitter
  - Altered neuroanatomy
- Strong familial links
- No specific genetic etiology
- Heritability:
  - Panic Disorder: 48%
  - Generalized Anxiety Disorder: 32%
  - Strong relationship between social anxiety and panic

Pathophysiology: Neurobiology

- Systems involved in sensing/responding to threat
  - Redundant to promote survival
- Reticular Activating System:
  - Locus ceruleus: norepinephrine in response to real or perceived threat
  - Dorsal raphé: serotonín mediates locus ceruleus
  - Lateral dorsal tegmentum: cholinergic, and mesolimbic/mesocortical dopamine impact brain sensitivity to threat
Pathophysiology: Neurobiology

- Amygdala and emotional valence
- Hippocampus
  - Stores memories
  - Highly sensitive to stress
- Sensitive system to make strong associations between paired events
  - Makes us receptive to false associations
  - Sensitivity of stress response system across a spectrum

Pathophysiology: Behavioral Inhibition

- Tendency to be significantly withdrawn or timid with quick fear response in novel situations
- Associated with social inhibition ("shyness")
  - Increase physiologic signs (Kagan et al 1998)
  - Increase risk of anxiety and panic (Smoller et al 2005)
  - Can be an inherited temperamental trait

Pathophysiology: Learned Response

- Strong paired response or a repeated paired response (trauma, phobia)
- Mirroring/modeling in first 3 years of life
- Cognitive distortions
  - Attribution bias
Pathophysiology:

Early Attachment

- Secure
- Insecure (Resistant)
- Insecure (Avoidant)
- Disorganized

ANXIETY

Epidemiology

- Most prevalent mental health condition in pediatrics
- 20% of children have a primary anxiety disorder
- Untreated, can often result in adult anxiety disorders or depression (Pine et al 1998)
- Females > males
- Lower academic performance (Woodward et al 2001)
- Most common in school-aged children:
  - Specific phobia
  - Separation anxiety
  - Generalized anxiety disorder
- Adolescents: co-morbid substance use to cope with untreated anxiety

Risk and Protective Factors

Risk Factors
- Genetics
- Temperament
- Parental anxiety
- Parent-child interactions

Protective Factors
- Coping styles
- Insight
- Intelligence
- Engagement in cognitive therapies
Clinical Presentation

- Most youth have little insight into their anxiety
  - May not consider fears as unreasonable
- Common presenting issues:
  - Frequent somatic complaints
  - Sleep disturbance
  - Change in appetite
  - Frequent need for reassurance
  - Avoidance of school
  - Avoidance of pleasurable activities
  - Irritability or explosive outbursts
  - Poor concentration

Clinical Presentation

What is the most common way children and adolescents cope with anxiety?

Generalized Anxiety Disorder

- Excessive worry for more days than not for at least 6 months
- Systemic and pervasive
- Difficult to control worries
- Associated with 3+ of the following (only 1 for kids):
  - Restlessness or on edge
  - Easily fatigued.
  - Difficulty concentrating
  - Irritability
  - Muscle tension
  - Sleep disturbance
Social Anxiety

- Fear of 1+ social situations when exposed to possible scrutiny by others
  - In children, must occur also in peer settings
- Social situations almost always provoke fear
  - In children, fear can be expressed nonverbally
- Social situations avoided/endured with intense anxiety
- Fear out of proportion to actual threat
- Symptoms must persist for at least 6 months
- Can be with performance only

Separation Anxiety

- Inappropriate, excessive fear concerning separation from attachment figures
  - Distress anticipating/experiencing separation from attachment figures
  - Worry about losing/harm to major attachment figures
  - Fear of being alone without major attachment figures at home or in other settings
  - Refusal to go away from home because of fear of separation
  - Refusal to sleep away from home or major attachment figure
  - Repeated nightmares involving separation
  - Repeated physical symptoms with separation or anticipated separation
- Symptoms last at least 4 weeks in children and adolescents

Specific Phobia

- Marked fear about a specific object or situation
  - In children, can be expressed nonverbally
- Phobic object/situation almost always provokes immediate fear and avoidance
- Fear out of proportion to actual danger
- Symptoms persistent for at least 6 months
- Specifiers
  - Animal
  - Natural environment
  - Blood/Injection/Injury
  - Situational
  - Other (choking/emesis, loud sounds...)
Panic Attacks

- Common!

“It’s for panic attacks. Hand them out to people you meet.”

Panic Disorder

- Abrupt surge of intense fear/discomfort, peaks within minutes, and ≥4 of the following occur:
  - Palpitations, pounding heart, or accelerated heart rate
  - Sweating
  - Trembling or shaking
  - Sensations of shortness of breath or smothering
  - Feelings of choking
  - Chest pain or discomfort
  - Nausea or abdominal distress
  - Feeling dizzy, unsteady, light-headed, or faint.
  - Chills or heat sensations.
  - Paresthesia
  - Derealization or depersonalization
  - Fear of losing control or “going crazy.”
  - Fear of dying
  - Must be aware of culture specific symptoms

- At least one attack followed by at least one month of one or both of the following:
  - Persistent worry about future attacks
  - Maladaptive behavior change in response to attack

Selective Mutism

- Consistent failure to speak in specific social situations where expectation to speak despite speaking in other situations.
- Duration of symptoms for at least 1 month
- Not related to developmental delay or cultural issues
School refusal

I DON'T WANT TO GO TO SCHOOL! I HATE SCHOOL!
I'D RATHER DO ANYTHING THAN GO TO SCHOOL!

Obsessive Compulsive Disorder

- **Obsessions:**
  - Recurrent thoughts/impulses/images
  - Intrusive and inappropriate causing distress
  - Not simple excessive worries about real-life stressors
  - Attempt to ignore/suppress through thought or action
  - Ego-dystonic (not as true in children) and not psychotic
- **Compulsions**
  - Repetitive behaviors or thoughts in response to an obsession or rigid rule
  - Aimed at preventing/reducing distress
  - Not connected in realistic way to the distressing obsession or are excessive
- **Time consuming**
- **Children do not need insight**

Post Traumatic Stress Disorder

- **Exposure to traumatic event**
  - Experienced, witnessed, confronted event(s) involving actual or potential death, injury
  - Intense fear, helplessness or horror
- **Re-experiencing**
- **Hypervigilance**
- **Avoidance**
- **Duration of at least one month**
  - Prior to one month, but at least 2 days, after traumatic event is termed an Acute Stress Disorder
PTSD

- Predicting development of PTSD:
  - Closer physical and emotional proximity to traumatic event
  - Frequent reminders or repeated exposures
  - Cognitive factors:
    - Locus of control
    - Ability to cope
    - Trauma-specific attribution
  - Pre-pubertal traumatic experience places at 3x higher risk
    - Parents underestimate duration and intensity of sx
  - Reduced hippocampal volumes

Assessment

- Evaluation including functional impairments
  - Development
  - Psychosocial stressors
  - Trauma
  - Physical symptoms
  - Cognitions
  - Social impairments
  - Co-morbid diagnoses

Assessment

- Screening Tools
  - Obtain information from multiple informants
  - For youth 8 years or older:
    - Multidimensional Anxiety Scale for Children (MASC)
    - Screen for Child Anxiety Related Emotional Disorders (SCARED)
    - Yale-Brown Obsessive Compulsive Scale (Y-BOCS)
    - Child PTSD Symptom Scale (CPSS)
  - For younger children: parental report, parental screening, observation
Differential

- Psychiatric
  - ADHD
  - Psychosis
  - Autism Spectrum Disorders
  - Learning disability
  - Mood disorders
- Physical

Anxiety Disorders
Due to Another Underlying Condition

- Substance-Induced Anxiety Disorder
- Anxiety Disorder due to a General Medical Condition
  - Endocrine conditions
  - Cardiovascular conditions
  - Neurologic conditions
  - Pulmonary conditions
  - Infectious processes
  - Electrolyte and vitamin disturbances
Treatment

• Establish baseline functioning and symptoms
• Treatment should be comprehensive
  – Psychotherapy
  – Education
  – Psychotropics, as indicated
• Regulate sleep, social interactions, diet
• Attend to psychosocial stressors both at home and at school

Reasons to add psychotropics:
  – Acute symptom reduction
  – Comorbid psychiatric condition
  – Partial response to psychotherapy
  – Severity
  – High likelihood of benefit of combined treatment

Treatment: Psychotherapy

• Coping Cat (Kendall 1990)
• Five components of CBT (Albano et al 2002):
  – Psychoeducation with child and parents
  – Somatic management skills training
  – Cognitive restructuring
  – Exposure
  – Relapse prevention
• Group therapy
• Assertiveness training
• OCD: Exposure and Response Prevention Therapy
• PTSD: Trauma-focused CBT
Treatment: Psychotropics

- First Line
  - Selective Serotonin Reuptake Inhibitors
- Second Line
  - Buspirone
  - Selective Norepinephrine Reuptake Inhibitors
- Adjunctive treatments
  - Benzodiazepines
  - Prazosin or alpha-2 agonists (PTSD)
  - Beta blockers (rarely used in children)
- Other considerations
  - Gabapentin
  - Mirtazapine
  - Antihistamines as PRN

- Start low and go slow
- Monitor closely
- Common side effects: nausea, insomnia, headaches, paradoxical agitation/anxiety, decreased libido
- Black box warning
- Tips: make small, frequent titrations, get to therapeutic dose quickly. Monitor closely!
- Response can take up to 6-8 weeks

Choice of SSRI: side effects, duration of action, compliance, personal or family response to treatment, other physical health considerations
- If 12 months and symptom free, can consider trial off medication

"Fear of getting caught in underwater debris, stuck 3 feet from your face. All better when a pharmacist took antihistamines."
References

- AACAP Practice Parameters- Anxiety Disorders. 2007
- AACAP- Anxiety Disorders in Children ppt by Dr. Jess Shatkin (NYU)
- DSM V - Anxiety Disorders
- Kaplan and Saddock Synopsis of Psychiatry 10th Edition

References


Questions
**Treatment: Psychotropics**

- Child-Adolescent Anxiety Multimodal Study (CAMS) 2008 (Walkup et al NEJM)
  - 488 children ages 7-17 with separation anxiety, generalized anxiety and social phobia
  - Treatment arms: CBT, Sertraline (to 200 mg/day), Combination Treatment, or Placebo
  - CGI (very much or much improved): 81% combination, 60% CBT, 55% sertraline, 24% placebo
  - Combination superior
  - Sertraline worked more quickly, but CBT = sertraline
  - No increased adverse events with sertraline
  - No increase risk of suicide

- Pediatric OCD Treatment Study
  - 112 children ages 7-17
  - 3 sites and 12 week study
  - Treatment arms: CBT, sertraline, combination or placebo
  - Combination superior, CBT better than sertraline
  - Sertraline and CBT better than placebo

- Fluoxetine for GAD, social phobia, selective mutism (Birmaher et al 2003, Black et al 1994)
- Sertraline for social phobia, SAD, GAD (Rynn et al 2002, CAMS)
- Paroxetine for social phobia (Wagner et al 2004)
- Fluvoxamine for social phobia, SAD, GAD (RUPP 2001)
- Venlafaxine for GAD, social phobia (Rynn et al 2007, Tourian et al 2004)
- FDA approved treatments for OCD: fluoxetine, sertraline, fluvoxamine, domipramine
Treatment: Psychotropics

• Considerations:
  – Route: fluoxetine, sertraline and citalopram have liquid formulations
  – Underlying physical health conditions: citalopram can prolong QTc, Venlafaxine can elevated BP/HR
  – Polypharmacy: fluoxetine is a potent 2D6 inhibitor
    • Pay attention for other medications that can place at high risk for serotonin syndrome
  – Comorbid symptoms: Duloxetine or gabapentin for comorbid pain; mirtazapine for comorbid nausea/poor weight gain
  – Do not use paroxetine in children