Attention-Deficit/Hyperactivity Disorder Assessment and Diagnosis

Speaker:

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Disclosures

Cartesian Solutions

Goals and Objectives

1. Recognize the presenting symptoms of ADHD
2. Discuss the core concept and DSM 5 criteria for diagnosing ADHD
3. Describe the AAP endorsed process of assessing ADHD, including the use of rating scales

2019 AAP ADHD Guidelines: What's new?

- Changes in DSM 5 criteria
  - <12 yo
  - 5 symptoms for 17+
- More emphasis on multimodal treatment, building the "team"
- Highlights that ADHD is chronic -> use chronic care model
- More emphasis on assessing for comorbidity
- First line treatment for preschoolers is behavior management

Wolraich ML, Hagan JF, Allan C, et al. AAP SUBCOMMITTEE ON CHILDREN AND ADOLESCENTS WITH ATTENTION-DEFICIT/HYPERACTIVE DISORDER. Clinical Practice Guideline for the Diagnosis, Evaluation, and Treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents. Pediatrics. 2019;144(4): e20192528

Your Patient: Bart

- 8 y.o. boy who you've known all his life
- Intact, college-educated family who care about boy and "argue like everyone"
- Early milestones unremarkable, early talker
- Mom brings in after one month in 2nd grade; teacher reports "trouble paying attention"; as a result grades are fair-poor
- Mom says he has always been really active, "just like his father" , preschool teacher said he was "handful"

More on Bart

- With his sibs he often interrupts and “can’t wait for anything”
- Easily distracted
- Slesyd up in class and disrupts frequently
- Difficulty settling and falling asleep
- “Good kid” and no physical aggression but have to watch him “all the time” or he can get hurt
- Last year in school he struggled also but parents thought due to teacher who “yelled a lot”

What is the Differential?

1. **ADHD**
2. **Adjustment reaction/trauma/loss**
3. **Anxiety**
4. **Learning disability/disorder**
5. **Depression (crying)**
6. **Sleep disorder**

First: What is ADHD?

- Internal deficit
  - Inability to stop, look, listen, and think
  - Intention deficit
  - Problem of modulation =“response organization and inhibition”
  - Problem of executive functioning
- External dopamine stimulation of reward system can improve attention!

DSM 5 Diagnosis

- **Inattention: Six or more symptoms of inattention for children up to age 16, or five or more for adolescents 17 and older and adults;**
- **Hyperactivity and Impulsivity: Six or more symptoms of hyperactivity-impulsivity for children up to age 16, or five or more for adolescents 17 and older and adults**
- **Onset: Several symptoms before age 12**
- **Duration at least 6 months**
- **Sx present in two or more settings**
- **Interferes** with social, school, or work functioning
- NOT only during schizophrenia/psychosis, not better explained by another disorder (e.g. anxiety, PTSD, mood, dissociative disorders)

ADHD Diagnostic Types

- Combined type (60%)
- Predominantly Inattentive type (25%)
- Predominantly Hyperactive-impulsive type (15%)

Epidemiology

- 2-3% preschoolers
- 5-8% school age
- Note: recent 11% probably overestimate
- 3-4% adolescents and adults
- Seen around the world 3-7%
- Boys:Girls 2:1 (adults: 1.6:1)
- Girls more likely to have inattentive type

Risk Factors: Genetics

- 75% heritable
  - Breast cancer 25%
  - Asthma 38%
  - Height 88%
- 25% have a parent with ADHD; 30% sibs; 40-50% children of parent with ADHD
- many specific genes hypothesized with some evidence, but none confirmed and no “single bullet”
- Candidate genes focused on dopamine and serotonin receptors and transporter

Risk Factors: Environment

- Brain injury (small % ADHD)
  - Neurological insults (trauma, infection, tumor, toxins e.g. lead)
  - Pregnancy and delivery complications:
    - Toxemia, post-maturity, maternal age
    - Exposure to cigarette smoking, alcohol
- Psychosocial: Low SES and maltreatment (but seen in ALL SES, family backgrounds) and NO causal relationship

ADHD: Medical “look alikes”

- Anemia
- Thyroid disorders
- Seizure disorders (e.g. absence)
- Deafness
- Sleep apnea
- Medications: antihistamines, sympathomimetics, steroids
- **In practice: labs generally NOT necessary; only when indicated by physical symptoms, PE**

ADHD: Psychiatric DDx

- Anxiety disorders
- Major Depression
- Post-traumatic stress disorder
- Adjustment disorder
- Autism
- Bipolar disorder (rare in childhood)
- Psychosis (rare)
- Substance use disorder (rare in childhood)

Key Questions for Differential Dx

- Has the child been traumatized?
- Is the onset of symptoms before age 6?
- Are the symptoms persistent, present every day, all day for more than 6 months?
- Are the symptoms causing problems in all or most situations?
- If YES to last 3 questions it is likely ADHD; if NO it is highly unlikely that it is ADHD

Comorbidity is the rule

- 67% clinical samples have at least one (probably lower in primary care settings)
- ODD 50%
- Conduct disorder 33%
- Depression 33%
- Anxiety 20-30%
- Learning disorders 20-60%
- Sleep problems

Making the Diagnosis

AAP Process of Care

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- Don’t do this alone: use office staff and review procedure
- Use longitudinal knowledge
- Interview parent(s) and child
- Need input from others (e.g. teachers)
- Use DSM 5 criteria: sx+persistence+functional impair+age of onset
- Use checklists
- Assess for comorbidity

Note: How ADHD is NOT Diagnosed!

- Despite claims to contrary there is no lab, EEG, or imaging test that diagnoses ADHD
- There is no psychological or neuropsychological test that is diagnostic although these can be helpful in assessing strengths and weaknesses, advocating in schools

Use Rating Scales

- Many standardized forms (Conners, ACTers)
- Vanderbilt free and validated; 6-17; keyed to DSM 5 sx
- Parent, teacher, self reports
- Available at www.projectteachny.org
- Useful for efficiently obtaining information, confirming diagnosis, tracking treatment response

Vanderbilt Parent and Teacher

- Count 2's, 3's
- Inattention (1-9): 6+
- Hyperactivity-impulsivity (10-18): 6+
- ODD(19-26P or 19-28T): 4+ (parent), 3+ (teacher)
- Conduct Disorder (27-40P ONLY); 3+
- Internalizing screen (41-47P or 29-35T): 3+
- PLUS: at least one area of impairment (4 or 5) items 36-43

Back to Bart…..

Vanderbilt ADHD Diagnostic Teacher Rating Scale

Child's Name: Bart + 5 **Teacher's Name:** **Teacher's Fax#**

Today's Date: **School:** **Grade:**

Directions: Each rating should be considered in the context of what is appropriate for the age of the child you are rating and should reflect that child's behavior since the beginning of the school year. Please indicate the number of weeks or months you have been able to evaluate the behaviors:

Is this evaluation based on a time when the child: ❑ was on medication ❑ not on medication ❑ not sure

Behavior:	Never	Occasionally	Often	Very Often
1. Fails to give attention to details or makes careless mistakes in schoolwork	0	1	2	3
2. Has difficulty sustaining attention to tasks or activities	0	1	2	3
3. Does not seem to listen when spoken to directly	0	1	2	3
4. Does not follow through on instructions and fails to finish schoolwork (not due to refusal or failure to understand)	0	1	2	3
5. Has difficulty organizing tasks and activities	0	1	2	3
6. Avoids, dislikes, or does not want to start tasks that require sustained mental effort	0	1	2	3
7. Loses things necessary for tasks or activities (school assignments, pencils, or books)	0	1	2	3
8. Is easily distracted by extraneous stimuli	0	1	2	3
9. Is forgetful in daily activities	0	1	2	3
10. Fidgets with hands or feet or squirms in seat	0	1	2	3
11. Leaves seat when remaining seated is expected	0	1	2	3
12. Runs about or climbs too much when remaining seated is expected	0	1	2	3
13. Has difficulty playing or engaging in leisure activities quietly	0	1	2	3
14. Is "on the go" or often acts as if "driven by a motor"	0	1	2	3
15. Talks excessively	0	1	2	3
16. Blurts out answers before questions have been completed	0	1	2	3
17. Has difficulty waiting in line	0	1	2	3
18. Interrupts or intrudes in on others (eg, butts into conversations /games)	0	1	2	3
19. Loses temper	0	1	2	3
20. Actively defies or refuses to comply with adult's requests or rules	0	1	2	3
21. Is angry or resentful	0	1	2	3
22. Is spiteful and vindictive	0	1	2	3
23. Bullies, threatens, or intimidates others	0	1	2	3
24. Initiates physical fights	0	1	2	3
25. Lies to get out of trouble or to avoid obligations (ie, "cons" others)	0	1	2	3
26. Is physically cruel to people	0	1	2	3
27. Has stolen things of nontrivial value	0	1	2	3
28. Deliberately destroys other's property	0	1	2	3
29. Is fearful, anxious, or worried	0	1	2	3
30. Is self-conscious or easily embarrassed	0	1	2	3
31. Is afraid to try new things for fear of making mistakes	0	1	2	3
32. Feels worthless or inferior	0	1	2	3
33. Blames self for problems, feels guilty	0	1	2	3
34. Feels lonely, unwanted, or unloved; complains that "no one loves him or her"	0	1	2	3
35. Is sad, unhappy, or depressed	0	1	2	3

Vanderbilt ADHD Diagnostic Teacher Rating Scale (DSM-5), Cont.

Child's Name: **Teacher's Name**

Today's Date: **School:** **Grade:**

Academic & Social Performance:	Excellent	Above Average	Average	Somewhat of a Problem	Problematic
1. Reading	1.	2.	3.	4.	5.
2. Writing	1.	2.	3.	4.	5.
3. Mathematics	1.	2.	3.	4.	5.
4. Relationship with peers	1.	2.	3.	4.	5.
5. Following directions	1.	2.	3.	4.	5.
6. Disrupting class	1.	2.	3.	4.	5.
7. Assignment Completion	1.	2.	3.	4.	5.
8. Organizational Skills	1.	2.	3.	4.	5.

Comments:

Tic Behaviors: To the best of your knowledge, please indicate if this child displays the following behaviors:

1. **Motor Tics:** Rapid, repetitive movements such as eye-blinking grimacing, nose twitching, head jerks, shoulder shrugs, arm jerks, body jerks, rapid kicks.

❑No tics present. ❑Yes, they occur nearly every day, but go unnoticed by most people. ❑Yes, noticeable tics occur nearly every day.

2. **Phonic (Vocal) Tics**: Repetitive noises including but not limited to throat clearing, coughing, whistling, sniffing, snorting, screeching, barking, grunting, repetition of words or short phrases.

❑No tics present. ❑Yes, they occur nearly every day, but go unnoticed by most people. ❑Yes, noticeable tics occur nearly every day

3. If **YES** to 1 or 2, Do these tics interfere with the child's activities (like reading, writing, walking, talking, or eating? ❑No ❑Yes

Previous Diagnosis and Treatment: Please answer the following questions to the best of your knowledge.

1. Has the child been diagnosed with ADHD or ADD?	❑No	❑Yes
2. Is he/she on medication for ADHD or ADD?	❑No	❑Yes
3. Has the child been diagnosed with a Tic Disorder or Tourette's Disorder?	❑No	❑Yes
4. Is he/she on medication for Tic Disorder or Tourette's Disorder?	❑No	❑Yes

Bart's Teacher Vanderbilt

- Inattention: **+6**
- Hyperactive-impulsive: **+8**
- ODD: **+1**
- Internalizing: **+0**
- Impairments: **+7**

- Diagnosis:
  - **ADHD, Combined type**

Outcome: General

- 75% childhood ADHD persists into adolescence
- 50% persist into adulthood (residual sx 67%)
- 33% outgrow
- Comorbidity critical to prognosis
- Bottom line: *for most this is a chronic, lifelong condition=* neurodevelopmental disorder and prevention and chronic care model principles relevant

Outcome: Risks

- Poor school achievement and failure to complete HS
- Un- or under-employment
- Smoking and substance abuse (mediated by Comorbid Conduct Disorder; NOT treatment)
- Divorce
- TBI
- MVAs
- Premature death (suicide, MVAs?)

Conclusions on Assessment

- ADHD is a serious, often lifelong, common public health problem recognized around the world
- PCPs are positioned well to diagnose early
- For assessment use
  - multiple informants
  - DSM 5 criteria
- Rating scales are your friend
- Look for comorbidity

Selected School Age ADHD Bibliography

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