Give Me Some Drugs Man
Diagnosis and Appropriate Management of Adult ADHD in an Era of Controlled Substance Vigilance

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Learning Objectives:

1) Review pathophysiology of ADHD
2) Review diagnostic tools
3) Review treatment options
4) Reduce uncertainty and discomfort for the practitioner

S.D. is a 37 y.o. F who presents with decreased concentration, feeling overwhelmed, anxious, and a life long history of trouble focusing and finishing tasks. She tells you she has been diagnosed in the past with ADHD and GAD. She says Zoloft just caused Side effects (SE) but Adderall helped her function.

Epidemiology of adult ADHD

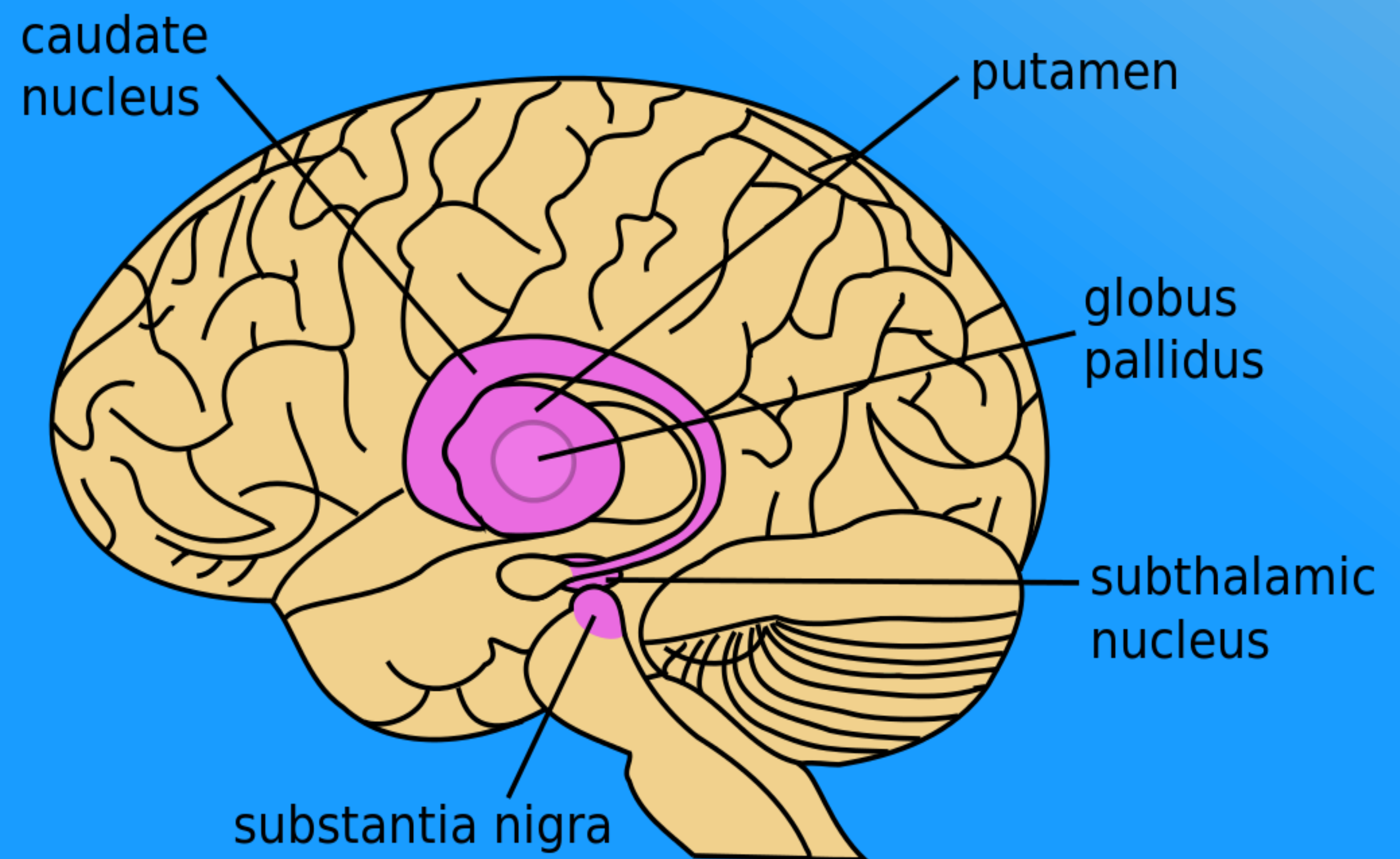
- Prevalence of adult ADHD in the US is 4-5%
- Most patients with childhood ADHD will persist into adulthood
- New evidence for "Adult Onset" ADHD
- ADHD is associated with significant impairment in occupational, academic and social functioning

Co-Morbid conditions are common:

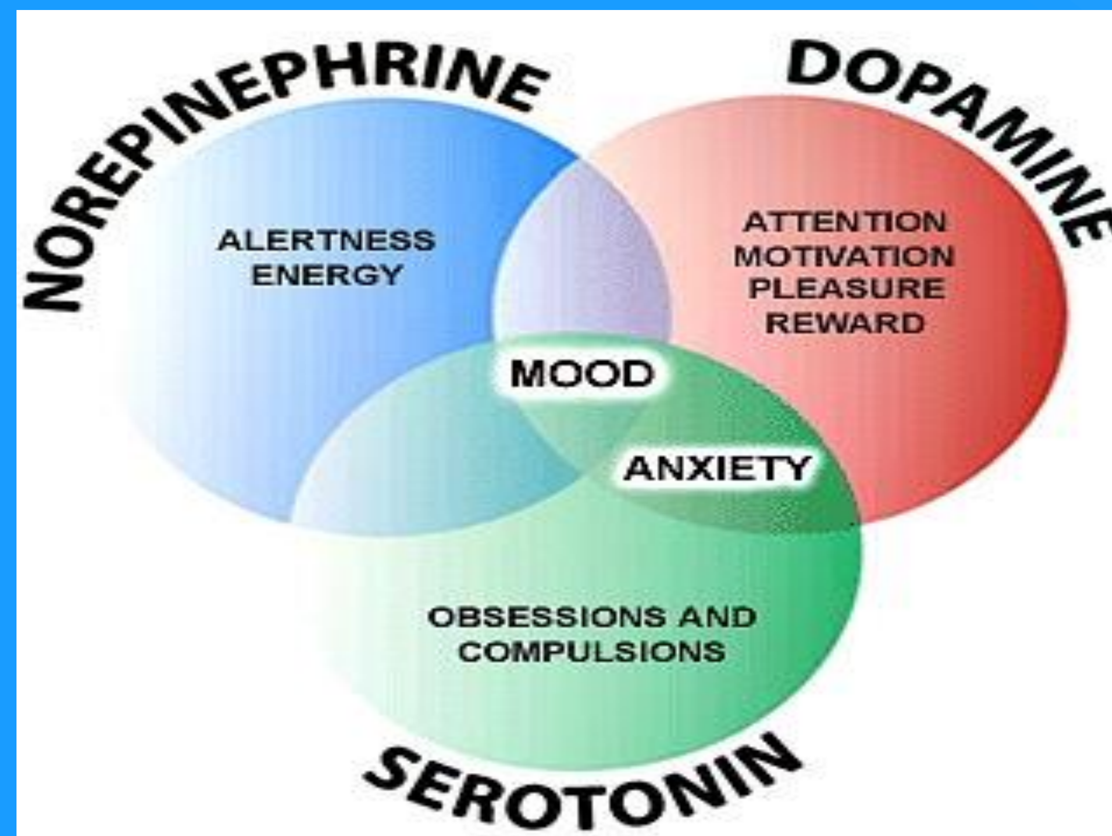
- Mood disorders Odds Ratio (OR) 2.7 to 7.5
- Anxiety disorders OR 1.5 to 5.5
- Any substance use disorder (SUD) OR 3
- Intermittent explosive disorder OR 3.7

In a meta-analysis of 29 studies of adults with SUD the lifetime prevalence of ADHD was 23.1%

Brain imaging in adults with ADHD show abnormalities of the prefrontal cortex and its projections to subcortical structures.



Hypoactivity of dopamine and norepinephrine in frontal-subcortical circuits underlies the brain and functional dysfunction in ADHD.



ADHD in adults is characterized by symptoms of:

- Inattention
- Impulsiveness
- Restlessness
- Executive dysfunction
- Emotional dysregulation

Ratio is nearly 4:1 M:F in children
Closer to 2:1 M:F in adults

Many of the symptoms of inattention in adults with ADHD are also classified as deficits of executive function which has been defined as “self-directed actions needed to choose goals and to create, enact and sustain actions toward those goals

Executive functions deficiencies:

- Working memory
- Task-shifting
- Self monitoring
- Initiation
- Self-inhibition

These deficits contribute to the inattention problems characteristic of adult ADHD:

- Remaining focused on a task
- Organizing activities
- Prioritizing tasks
- Follow through
- Time management

Other impairments:

- Difficulty keeping jobs
- Interrupting
- Irritability
- SUD (Substance use disorder)
- Traffic tickets & accidents
- Criminal activity
- Mortality (in Denmark 5.85 vs 2.21 10,000 per person

Course:

40-60% of children with ADHD continue to have persistent symptoms into adulthood (initial severity most predictive of persistent disease).

Late onset ADHD:

Cohort study in New Zealand 90% of adults with ADHD lacked childhood history of ADHD

Cohort study in Brazil 87% of adults with ADHD lacked childhood history

Diagnosis:

In evaluating for ADHD in adults the key is to focus on adult manifestations:

- Hyperactivity
- Impulsivity
- Inattention

DSM-5

Overview of the DSM-5™ medical classification system for ADHD

- A persistent pattern of **inattention** and/or **hyperactivity-impulsivity** that interferes with functioning or development:[1]
  - **For children**, six or more of the symptoms (Table) have persisted for at least 6 months to a degree that is inconsistent with developmental level, and that negatively impacts directly on social and academic/occupational activities. **Please note**: the symptoms are not solely a manifestation of oppositional behavior, defiance, hostility or failure to understand tasks or instructions[1]
  - **For older adolescents and adults (age 17 and older**), five or more symptoms are required (Table)[1]
- Several inattentive or hyperactive-impulsive symptoms present prior to age 12 years[1]
- Several inattentive or hyperactive-impulsive symptoms present in two or more settings (e.g. at home, school or work; with friends or relatives; in other activities)[1]
- Clear evidence that the symptoms interfere with, or reduce the quality of, social, academic or occupational functioning[1]
- Symptoms do not occur exclusively during the course of schizophrenia or another psychotic disorder, and are not better explained by another mental disorder (e.g. mood disorder, anxiety disorder, dissociative disorder, personality disorder, substance intoxication or withdrawal).[1]

DSM-5 continued

DSM-5 diagnostic criteria for ADHD: symptoms of inattention, hyperactivity and impulsivity

Symptoms of inattention	Symptoms of hyperactivity and impulsivity
Often fails to give close attention to detail or makes mistakes	Often fidgets with or taps hands and feet, or squirms in seat
Often has difficulty sustaining attention in tasks or activities	Often leaves seat in situations when remaining seated is expected
Often does not seem to listen when spoken to directly	Often runs and climbs in situations where it is inappropriate (in adolescents or adults, may be limited to feeling restless)
Often does not follow through on instructions and fails to finish schoolwork or workplace duties	Often unable to play or engage in leisure activities quietly
Often has difficulty organizing tasks and activities	Is often 'on the go', acting as if 'driven by a motor'
Often avoids, dislikes or is reluctant to engage in tasks that require sustained mental effort	Often talks excessively
Often loses things necessary for tasks or activities	Often blurts out answers before a question has been completed
Is easily distracted by extraneous stimuli	Often has difficulty waiting their turn
Is often forgetful in daily activities	Often interrupts or intrudes on others

Pt S.D. completed the ASRS (Adult Self-Reporting Scale) v1.1 and endorsed 5/6 questions. She was positive for difficulty finishing projects/tasks, difficulty organizing, difficulty remembering appointments/obligations, avoids tasks involving a lot of thought, feels overly active. Pt reports difficulty since age 5 and impairment in work, social/community activities

The following questionnaire can be used as a starting point to help recognize the signs/symptoms of adult ADD but is not meant to replace consultation with a trained healthcare professional.
An accurate diagnosis can only be made through a clinical evaluation.

This Adult Self-Report Scale-V1.1 (ASRS-V1.1) Screener is intended for people age 18 years or older.

Check the box that best describes how you have felt and conducted yourself over the past 6 months.					
	Never	Rarely	Sometimes	Often	Very often
1. How often do you have trouble wrapping up the final details of a project once the challenging parts have been done?					
2. How often do you have difficulty getting things in order when you have to do a task that requires organization?					
3. How often do you have problems remembering appointments or obligations?					
4. When you have a task that requires a lot of thought, how often do you avoid or delay getting started?					
5. How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?					
6. How often do you feel overly active and compelled to do things, like you were driven by a motor?					

PT referred to Behavioral health clinician (BHC) for further evaluation. PHQ9 =16 Moderately severe depression. GAD-7=14. Moderately anxiety. AUDIC-C low risk drinking. PTSD-PC=0. BAARS-IV completed by patient, father and by her spouse. Overall results very high likelihood of current ADHD

BHC begins Cognitive behavioral therapy (CBT) and pt is referred back for medication management

How to proceed?

Pharmacologic Treatment of ADHD

Short term studies in adults show the benefits of pharmacologic treatment of adults with ADHD but there is a paucity of data on long term treatment

Stimulants: Increase intrasynaptic dopamine and norephenephrine. Methylphenidate – Ritalin, Concerta, Metada Acting. Amphetamines (dextroamphetamine Adderal and Lisdexamfetamine - Vyvanse). Also come in short and long acti

Pharmacologic Treatment of ADHD

Duration of clinical effects:
short acting 3-5 hours
long acting 8-12 hours

Consider risk of abuse, diversion, as well as patient characteristics when choosing between long and short acting medications. Start low at 5-10mg and slowly titrate up to maximize beneficial effects and minimize side effects (dry mouth, insomnia, irritability, dysphoria, weight loss, HA increase in pulse and BP). Watch for motor or verbal tics.

Pharmacologic Treatment of ADHD

Patients with current or past SUD are at higher risk for misuse and addiction.

Non-stimulants:

- Atomoxetine - Strattera
- Bupropion - Wellbutrin
- TCA – Amitriptyline, nortriptyline, desipramine
- Venlafaxine - Effexor

Pharmacologic Treatment of ADHD

Atomoxetine. Modestly more effective than placebo. less effective than stimulants. Start at 40mg/day. Can increase to 80mg/day after a week. Side effects similar to stimulants.

Bupropion. Comes in XR and SR formulations. Use 150 of XR or 100 BID of the SR. Can increase up to 300 of the XR or 150 BID of the SR. Unlike stimulants, the clinical effects of bupropion take a few weeks to appear.

Pharmacologic Treatment of ADHD

For co-occurring ADHD and depression - Bupropion or stimulant +SSRI. Co-occurring ADHD and anxiety - stimulant + SSRI or can try TCA or atomoxetine. Add CBT if you can. Co-occurring ADHD and h/o SUD use atomoxetine or bupropion. If active SUD is present it should be addressed and stabilized prior to pharmacotherapy for ADHD.

Back to our patient: She continues to see our BHC for CBT and I prescribed Adderall XR 10mg daily. Her PMP has been reviewed and is clean. Random UDS are appropriate. Pt reports improvement in ADHD symptoms without any problematic side effects.

ADHD Resources

- www.CHADD.org
- www.ADD.org