ADHD and HIV

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Attention-Deficit / Hyperactivity Disorder

DSM-5 Diagnostic Criteria

1) ≥ 6 sx of inattention (5 for adults) for 6 months or more
   • Often fails to pay attention, makes careless mistakes
   • Often has difficulty sustaining attention in tasks
   • Often does not seem to listen
   • Often does not follow through
   • Has difficulty organizing tasks or activities
   • Avoids / dislikes tasks requiring mental effort
   • Often loses things necessary for tasks
   • Easily distracted by extraneous stimuli
   • Often forgetful in daily activities
2. 6 or more sx of hyperactivity-impulsivity (5 for adults)
   • Often fidgets w/ hands/feet, squirms in seat
   • Often leaves seat when remaining seated is expected
   • Often runs or climbs excessively [inappropriately]
   • Often has difficulty playing quietly
   • Often “on the go” as if driven by motor (or restless for adults)
   • Often talks excessively
   • Often blurts out answers before questions are completed
   • Often has difficulty awaiting turn
   • Often interrupts, intrudes, butts in
Attention-Deficit / Hyperactivity Disorder

DSM-5 Diagnostic Criteria

3. Onset of sx before age 12
4. Persistence of sx for at least 6 mo
5. Clear evidence of clinically significant impairment in social, academic or occupational functioning
6. Not due to another disorder

Associated clinical features:
- Low frustration tolerance
- Sleep problems
- Increased risk taking behavior
- Over-reactivity
- Difficulty delaying gratification
- Hasty and careless response style

DSM-5, 2013
Prevalence of ADHD

5-8% in school-aged children. More prevalent in males.

- Approx. 50% have Oppositional Defiant Disorder or Conduct Disorder
- Symptoms attenuate during late adolescence & adulthood
- Roughly half of children diagnosed with ADHD will experience some persistent symptoms into adulthood

4% of adults

Barbaresi, Katusic et al. 2004; Froehlich, Lanphear et al. 2007)
Dx of ADHD: American Academy of Child & Adolescent Psychiatry *Practice Parameters*

- Clinical interviews w/ parents and patient
- Information from teachers about school functioning
- Review medical, social, and family hx
- Psychiatric evaluation to R/O other disorders and assess co-morbid conditions

Pliszka S et al, JAACAP 2007
ADHD Rating Scales

- SNAP –IV Teacher & Parent Rating Scale forms (J.M. Swanson)
- Conners’ ADHD Rating Scales
- Adult ADHD Self-Report Scale (ASRS)

(Helpful to quantify behavior and monitor response to treatment)
Diagnosis of Adult ADHD

- Diagnosed based on a thorough psychiatric evaluation that considers childhood symptoms, medical history, whether the person has a history of substance abuse, or other psychiatric & medical conditions.

- Differential dx: Addictive Disorders (especially stimulant dependence), MDD, Bipolar, Anxiety disorder, Antisocial PD, thyroid disorder, FAS, other learning disorders, **AND** other CNS pathology such as HIV-Associated Dementia.

- Neuropsychological testing and laboratory results in patients w/ HIV.
ADHD and substance use disorders

• Among individuals w/ adult ADHD: prevalence of SUD as high as 40% (Kalbag & Levin, 2005)

• Prevalence of ADHD among those w/ SUD: 3 times that in general population (Rounsaville, 1991)

• Co-occurring ADHD diagnosis is associated with:
  - earlier onset and more severe course of SUD
  - worse outcomes in treatment
  - higher rates of relapse
ADHD Medication Options

- Stimulants (controlled subs, monthly prescriptions)
  - Methylphenidate and methylphenidate transdermal patch
  - Amphetamine, lisdexamfetamine
- Atomoxetine
- Alpha-2 agonists
  - Guanfacine
  - Clonidine
Use of non-addictive medications for treatment of ADHD patients with Addictive Disorders

**ADHD Non-stimulant options**

- Atomoxetine (®Strattera) NE reuptake inhibitor
  
  - Increases both NE and DA in prefrontal cortex
  
  - Start at 40mg q d. Gradual onset of effects, 4-6 wks at target dose of 80-100mg for optimal effects

- Guanfacine (®Intuniv) (Alpha 2 adrenergic agonist)
  
  - 1-2mg is target dose

- Bupropion (®Wellbutrin)

- Clonidine (alpha 2 adrenergic agonist)

- Desipramine
Adverse effects of psychostimulants

- Appetite suppression and weight loss
- Insomnia
- Growth deceleration in children
- Mood lability, irritability, mania
- Tics and tremors, bruxism
- Anxiety and agitation
- Nail/skin picking
- HTN and tachycardia
- Headaches
- Seizures
- Paranoia, hallucinations, delusions
- Formication
Adverse effects of Atomoxetine

- Appetite suppression and wt loss
- Growth deceleration (not as much as w/ stimulants)
- Hypertension & tachycardia
- Headaches
- Insomnia
- Irritability
- Suicidal ideation
ADHD meds and ARVs

• Methyphenidate and Lisdexamphetamine - not P450 metabolized

• Amphetamines and Atomoxetine – 2D6 metabolism
  ↑ levels w/ 2D6 inhibitors such as Ritonavir and Cobicistat

• Guanfacine - 3A4 metabolism
  ↑ levels w/ 3A4 inhibitors such as Ritonavir and Cobicistat

http://hivinsite.ucsf.edu & http://madisonclinic.org
Treatment of ADHD in adults w/ SUD

• When treating persistent ADHD symptoms in adult patients with co-morbid for SUD, emphasis is on use of non-stimulant medications such as Buproprion or Atomoxetine (Riggs 1998; Schubiner 2005).

• Diversion of prescribed stimulants is worrisome in SUD pts (Wilens, Gignac et al. 2006), particularly among college students (Upadhyaya, Rose et al. 2005; McCabe, Teter et al. 2006; Teter, McCabe et al. 2006).
RESULTS: 21 studies representing 113,104 subjects.

- Past yr non-prescribed stimulant use:
  - 5% - 9% in grade school – HS
  - 5% - 35% in college students.

- Lifetime rates of diversion: 16% - 29% of students w/ stimulant prescriptions were asked to give, sell, or trade their medications.

Misuse and diversion of stimulants prescribed for ADHD: a systematic review of the literature

- Whites, members of fraternities & sororities, those w/ lower GPAs, use of immediate-release compared to extended-release preparations, & individuals w/ SUDs are at highest risk for misusing & diverting.

- Reported reasons for use, misuse, & diversion of stimulants include to concentrate, improve alertness, "get high," or experiment.

- CONCLUSIONS: Individuals both with & without ADHD misuse stimulant rxs. Need to carefully monitor high-risk individuals for the use of non-prescribed stimulants & educate individuals w/ ADHD about misuse & risks of diversion of the stimulants

Patterns and predictors of medication compliance, diversion, & misuse in adult prescribed methylphenidate users.

66 adults currently prescribed MPH (53% male) completed structured interviews & provided details regarding their medication & other substance use histories.

RESULTS:
• Participants used their medication as prescribed on 14.5 (SD 11.7) of the past 30 days.
• 44% admitted to diverting it & 29% admitted to inappropriate use.
• MPH misuse & diversion were both associated w/ the use of illicit stimulants such as amphetamine & cocaine.

CONCLUSIONS: Poor medication compliance, diversion, & misuse are relatively common & interrelated among adult MPH users. MPH prescriptions should be monitored closely in individuals w/ histories of illicit substance use.

Strategies to reduce diversion

1. Screen for Subs Use Disorders
2. Rx: small amts, documenting amts & refills
3. Look for aberrant behaviors: lost meds, early refills, visits to other doctors for additional meds
4. Monitor for illicit drug use or absence of prescribed drug in urine tox: Urine tox screens should be done before & during treatment w/ controlled prescriptions
5. Use the state Prescription Monitoring Program
6. Discuss illegality of rx diversion & consequences
7. Red Flags:
   - Requesting most popularly diverted drugs (®Vicodin, ®Oxycontin, ®Adderall, ®Xanax, ®Valium)
   - Pt is on more than 1 controlled drug rx