Challenging Cases of ADHD

Larry Merkel, Jr. MD, PhD
Department of Psychiatry and Neurobehavioral Sciences
University of Virginia
Charlottesville, VA, USA

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I have no disclosures.
AGENDA

• Definition
• Consequences
• Prevalence
• Diagnosis
• Comorbidity vs. Mimicry
• Strategies
ADHD can be defined as a heterogeneous syndrome of unknown etiology that affects attention, cognition, motor activity, and executive functioning with variable outcome and high rates of psychiatric comorbidity, resulting in a great deal of distress and disability.
Consequences of ADHD in Adults

- Occupational/Educational
- Driving
- Criminal
- Obesity
- Social Functioning
- Self-esteem
- Service Use
- Suicide
Incidence of injuries among individuals aged 0 to 64 years by ADHD status. (Merrill et al., 2009).
Economic Impact
(Doshi, et al. 2012)

- ADHD – $143-266 billion
- MDD – $124 billion
- GAD – $139-155 billion
- All Cancers – $260 billion
- Diabetes – $174 billion
- Hypertension – $76.6 billion
- Heart Failure – $34.4 billion
- Asthma – $20.4 billion
Prevalence

- Occurs in 5 - 10% of children
- 50 - 80% of adolescents still meet criteria
- 30 - 50% of adults still meet criteria
- 3 - 5% of general adult population
- M:F::1.6-2:1
- Much higher in special populations
DSM – 5 Criteria

• For at least 6 months
• Present prior to age 12
• Meet 6 of criteria or 5 if > 17 yoa
• Present in 2 or more settings
• Symptoms interfere with and reduce quality of functioning
• Not due to another disorder
DSM 5 - Inattention

a. Fails to pay close attention, careless mistakes
b. Difficulty sustaining attention in tasks
c. Does not listen
d. Does not follow through on tasks
e. Difficulty organizing behavior

a. Overlooks or misses details, work is inaccurate.
b. Difficulty remaining focused in lectures, conversations, or lengthy readings.
c. Mind seems elsewhere
d. Starts but quickly loses interests in tasks, easily sidetracked.
e. Difficulty managing sequential tasks, difficulty keeping materials and belongings in order; messy, disorganized work; poor time management, fails to meet deadlines.
DSM 5 Inattention

f. Avoids/dislikes tasks requiring sustained effort

f. Avoids preparing reports, completing forms, reviewing lengthy papers

g. Loses necessary things

g. Losses wallets, keys, paperwork, glasses, mobile phones.

h. Easily distracted

h. May include unrelated thoughts.

i. Forgetful in daily activities

i. Forgets chores, running errands, returning calls, paying bills, and keeping appointments.
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<th>Hyperactivity/Impulsivity</th>
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<td>b. Cannot stay in place.</td>
<td>b. Leaves office or other workplace.</td>
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<td>c. Inappropriate moving about or restlessness.</td>
<td>c. Subjective feeling of restlessness.</td>
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<td>d. Unable to relax quietly.</td>
<td>d. Must be active on the weekends or vacations.</td>
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<td>e. “On the go” or “Driven by a motor.”</td>
<td>e. Unable to be or is uncomfortable being still for extended time, as in restaurants, meetings; may be experienced by others as being restless or difficult to keep up with.</td>
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### DSM 5 – Hyperactivity/Impulsivity

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<th>f. Talks excessively</th>
<th>f. May seem circumstantial, tangential or overly detailed, but not rapid.</th>
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<td>g. Blurts out responses</td>
<td>g. Completes other people's sentences; cannot wait their turn in conversation</td>
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<td>h. Difficult waiting turns</td>
<td>h. Difficulty waiting in lines, as at the grocery store. May abandon cart and leave.</td>
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<td>i. Interrupts or intrudes on others</td>
<td>i. May intrude upon others or take over what they are doing.</td>
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Associated Features

- **Mood and Affect**: Irritability, volatility, swift mood changes, hot temper, low frustration tolerance
- **Neurocognitive Deficits**: Difficulties with working memory, effortful control or inhibition, self-regulation, motivation, response variability, and personality traits
- **Sleep**: Daytime sleepiness, insomnia, delayed sleep phase syndrome, fractured sleep, RLS, sleep disordered breathing
Adult ADHD Features

- Subtle or internal motor hyperactivity
- Attention deficits
- Affective lability
- Hot temper, explosive, short-lived outbursts
- Emotional over reactivity
- Disorganization, inability to complete tasks
- Impulsivity
- Motivational deficits
Chief Complaints
(Fields, Johnson, & Hassig 2017)

• Time management difficulties
• Job problems
• Anger issues
• Addiction
• Relational problems
• Comprehension problems
• Child diagnosed with ADHD
Retrospective Childhood Diagnosis

- School experience
- Childhood context
- Childhood activity pattern
- Parenting pattern
- Intelligence
- Drug and alcohol history
Aids to Diagnosis

- Screening tools
- Neuropsychological testing
- Urine for drug screening
- Collateral information
- Brain based biomarkers
ADHD

Impulse control/personality disorders
- Oppositional defiant disorder
- Conduct disorder
- Antisocial personality disorder
- Borderline personality disorder
- Intermittent explosive disorder

Mood disorders
- Major depressive disorder (esp. seasonal affective disorder)
- Bipolar disorder
- Dysthymic disorder
- Cyclothymic disorder

Anxiety disorders
- Generalized anxiety disorder
- Social phobia/specific phobia
- Posttraumatic stress disorder
- Obsessive-compulsive disorder
- Panic disorder
- Agoraphobia

Substance use disorders
- Alcohol abuse/dependence
- Drug abuse/dependence

Learning disabilities
- Reading
- Math
- Written expression

Sleep disorders
- Circadian rhythm disturbances
- Obstructive sleep apnea
- Excessive daytime sleepiness
- Restless legs/periodic limb movement disorder
Comorbidity vs. Mimicry

- 50-90% at least one
  - >30% have 2 or more
- Mood Disorders – 45%
- Anxiety Disorders – 50-60%
- Substance Use Disorders – 36%
- Impulse Control/Personality DOs – 70%
- Learning Disabilities – 18-44%
ADHD and Mood Disorders

- Major Depression: 11.5-53.5%
- Dysthymic Disorder: 11.5-25%
- Bipolar Disorder Spectrum: 19.4-25%
- ADHD in those with a Mood DO: 13.1%
- Family Studies
- Relationship to childhood treatment
ADHD and Bipolar Disorder

- 19.5 to 25% of ADHD have mania
- > 50% of adolescents with mania have ADHD symptoms
- Family studies
- Differentiation
ADHD and Anxiety DOs

- Generalized Anxiety DO: 8-53%
- OCD/OCPD
- Others: Panic DO, Agoraphobia, PTSD, Social Phobia, and Specific Phobia
- Differentiation
- Treatment implications
ADHD and Substance Use Disorders

- Nicotine – 2 to 3x general population
- Alcohol Use DO - 17 to 36%
- Drug Use DO - 12 to 20%
- Drug of choice
- Course
Substance Use Odds Ratios
(Nigg 2013)

- Nicotine: 2.3-2.8
- Alcohol: 1.3-1.7
- Cannabis: 1.5
- Cocaine: 2.0
- Psychoactive Drugs: 1.6
- Non-specific Drug Use: 2.6
- Non-alcohol Drug Use: 3.5
ADHD and Impulse Control/Personality Disorders

- Oppositional DO - 20 to 53%
- Conduct DO - 15 to 30%
- Antisocial PDO - 10 to 45%
- Borderline Personality DO – 38-65%
- ADHD in those with ICDO – 12.3%
- Family Studies
- Severity of disability
- Predictors
Genetics versus Environment

Genetic Load

Nurturance
- High
- Low

Structure
- High
- Low

Low

High
Profiles

• Diagnosed and treated in childhood
  – Still present
  – New condition mimicking ADHD
• Not diagnosed and treated in childhood
  – Noncomplicated
  – Complicated with comorbidities
  – Comorbidities and not ADHD
Strategies

• Treat first what is obvious.
• Referral to psychiatry
  – Second opinion
  – Complicated care
• Monitor closely
  – Bring in spouse or partner if possible
Treated Participants with ADHD compared with untreated ADHD

- Benefit: 72% (37 Studies)
- No benefit: 28% (15 Studies)
Treatment of ADHD

- **Stimulants — Methylphenidate (MPH)**
  - MPH IR – *Ritalin*
  - MPH ER – *Ritalin LA*
  - MPH Modified Release – *Metadate CR*
  - MPH Oral Suspension – *Methylin*
  - MPH Oral Suspension ER – *Quillivant XR*
  - OROS MPH – *Concerta*
  - MPH Transdermal System – *Daytrana*
  - Dexmethylphenidate HCl – *Focalin*
  - Dexmethylphenidate HCL ER – *Focalin ER*
Treatment of ADHD

• Stimulants – Amphetamines
  – Dextroamphetamine – *Dexedrine*
  – Mixed Amphetamine Salts IR – *Adderall*
  – Mixed Amphetamine Salts ER – *Adderall XR*
  – Lisdexamfetamine dimesylate – *Vyvanse*
Stimulant Treatment Side Effects

• Common (About 50%): Insomnia, decreased appetite, abdominal pain, weight loss, tics, jitteriness, headache
• Less common (About 12%): Anxiety, dizziness, drowsiness, “rebound”
• Rare (Less than 2%): Severe movement disorders, obsessive-compulsive symptoms, psychosis
Treatment of ADHD

• **Tricyclic Antidepressants**
  – Desipramine
  – Imipramine
  – Atomoxetine – *Strattera*

• **Other Antidepressants**
  – Buproprion – *Wellbutrin*
  – SNRIs: Venlafaxine/*Effexor*, Dulexetine/*Cymbalta*, Desvenlafaxine/*Pristiq*
  – MAOIs - *Selegiline*
Treatment of ADHD

• Other Agents
  – Carbamazepine
  – Clonidine (Clonidine ER – Kapvay)
  – Guanfacine (Guanfacine ER – Intuniv)
  – Bromocryptine
  – Levodopa
  – S-adenosyl-L-methionine
  – Nicotinic Agents
  – Modafinil
  – Cholinesterase Inhibitors
“Pipeline” Drugs

- Catecholamine Reuptake Inhibitors
- Serotonin Receptor Agonists
- Alpha 2a Receptor Agonists
- Trace Amine Receptor Agonists
- Dual Mechanism (NERI and Ser-1A PA)
- Cannaboid Receptor Modulators
- Neurokinin Receptor Antagonists
- NMDA Antagonists
- AMPA Modulators
- Histaminergics
- Racetams
- Cognitive Enhancers
Treatment Concerns: Neuropsychiatric
(Merkel 2010)

- Psychosis: 2-5/100 person years. 92% resolve
- Affective: Depression rare, Mania case reports. Safe in Bipolar AD if mood stabilizer
- Anxiety: May be worse or better
- OCD/Hyperfocusing: Case reports
- Sleep: Variable
- Neurotoxicity: With Cocaine, but not stimulants
- Seizures: Safe if anticonvulsant
- Tics: Negligible and transient
Treatment Concerns: Other
(Merkel 2010)

• Cardiovascular/Hypertensive: Rare and minimal, get EKG if any history
• Cytogenic: No evidence of increased risk of cancer
• Miscellaneous: Glaucoma, Hematological, Hepatotoxic, Dermatological, Obstetrical
• Drug interactions: Increase with some SSRIs and SNRIs; Decrease with Carbamazepine
Discontinuation and Non-adherence (Sanchez, et al. 2005)

• 20-65% non-adherence rate
• At 6 months still taking medication
  – MPH IR 14%
  – MAS IS 19%
  – MPH ER 30%
• No gender differences
• More benefit = more adherence
• Adolescents have the highest rate of non-adherence
Practical Treatment Strategies

- Match lifestyle needs
- Flexibility in dosing
- When to use a non-stimulant
- Treat obvious comorbidities first
- Setting limits
Conclusions

• ADHD is a highly prevalent
• Diagnosis can be very complicated
• Very good treatment is available with high response rate
• Treatment is relatively safe
• Coaching and various therapies can be helpful along with medication