

HUB Psychiatry

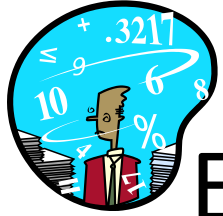
Assessment and Treatment of ADHD

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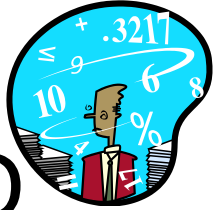
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Epidemiology and Etiology of ADHD



- ADHD prevalence has significantly increased over the last decade
- In 2007, 4.1% of Canadian children aged 6-9 were diagnosed with ADHD, 3.3% on medication
- Heritability is ~75%
- Non-genetic factors include; perinatal stress, low birth weight, traumatic brain injury, maternal smoking during pregnancy, and severe early deprivation
- Dopamine and norepinephrine are implicated neurotransmitters
- ADHD is associated with deficits in executive functions (e.g. inhibitory control, working memory, effortful attention)



How do I assess for ADHD?



- ADHD is a clinical diagnosis, there is no formal test
- Diagnosis is made based on interviews with caregivers and child
 - Include information from other sources such as teachers
 - Consider inclusion of rating scales to help in aid of diagnosis
 - Conner's Rating Scale-Revised, SWAN Rating Scale, SNAP-IV Rating Scale, ADHD Rating Scale-IV



How do I assess for ADHD?



- Be sure to assess for other causes of symptoms
 - Rule out any underlying medical causes
 - Rule out other mental health diagnosis and co-morbidities
 - Pay special attention to any learning disabilities as they can often be co-morbid with ADHD, and if untreated can worsen the symptom burden
 - Other common co-morbidities
 - Anxiety, OCD, oppositional defiant disorder, conduct disorder, depression, substance use, tic disorders

Core ADHD Symptoms

Inattention (IA)

1. Doesn't attend to details or makes careless mistakes
2. Difficulty sustaining attention in task/play
3. Doesn't listen
4. Doesn't complete tasks
5. Difficulty organizing
6. Avoids tasks requiring focus
7. Loses things
8. Distractible
9. Forgetful

Hyperactivity (H)

1. Fidgets
2. Leaves seat
3. Runs about or feels restless
4. Doesn't play quietly
5. "On the go"
6. Talks excessively

Impulsivity (I)

7. Blurts out answers
8. Doesn't await turn
9. Interrupts or intrudes

DSM-5 Diagnosis

- Symptoms of inattention and/or hyperactivity or impulsivity for 6+ months
- Onset prior to age 12
- Symptoms in two settings resulting in impaired function
- Symptoms not better explained by another mental health disorder
- Three presentations of ADHD
 - Predominantly inattentive
 - $\geq 6/9$ inattentive symptoms
 - Predominantly hyperactive/impulsive
 - $\geq 6/9$ hyperactivity/impulsivity symptoms
 - Combined Presentation
 - $\geq 6/9$ of both inattention and hyperactivity/impulsivity symptoms



Treatment: Psychoeducation and Support

- Psychoeducation is an important component in the treatment of ADHD
- Evidence shows that educating others about the diagnosis has been found to:
 - Improve knowledge about ADHD
 - Increase positive attitudes and behaviors towards individuals with ADHD
 - Enhance adherence to treatment



Treatment: Behavioral Management



- Behavioral management is an evidenced based treatment for ADHD
- Can be a sole treatment or used in conjunction with medications for treatment of ADHD
- Examples of behavioral management strategies are included in the resource section



Treatment: Medications



- Stimulant medications are considered first line treatment for ADHD
 - Two main classes of stimulants are methylphenidates and amphetamine based stimulants
 - Both classes of stimulants are equally effective
- Stimulants have a high response rate
 - 70% will respond to one stimulant, 90% will respond to either class of stimulants
- Other treatment options for ADHD include;
 - Atomoxetine, alpha-2 agonists, bupropion, TCA, modafinil

Stimulant Dosing Summary

These dosing guidelines are intended to provide general information, and should not supplant clinician judgment with respect to particular patients or clinical situations.

	Starting Dose (mg)	Dose Frequency	Usual Single Dose Range by Weight (mg/kg/dose)	Usual Daily Dose Range by Weight (mg/kg/day)	Max Single Absolute Dose (mg)	Max Daily Absolute Dose (mg)	Off-Label Max Daily Absolute Dose (mg)*
Ritalin	5	bid-tid	0.3-0.7	0.6-2.1	20	60	100 mg (>50 kg)
Ritalin SR	(20 mg is the only tablet available)	qam-bid	0.6-1.4	0.6-2.1	40	60	100 mg (>50 kg)
Concerta	18	qam	0.6-2.1	0.6-2.1	54-72**	54-72**	108 mg
Biphentin	10	qam	0.6-1	0.6-1	60-80***	60-80***	N/A
Dexedrine tablet	2.5-5	bid-tid	0.15-0.5	0.3-1.5	20	40	60 mg (>50 kg)
Dexedrine spansule	10	qam-bid	0.3-1.5	0.3-1.5	40	40	60 mg (>50 kg)
Adderall XR	5-10	qam	0.3-1.5	0.3-1.5	30	30	60 mg (>50 kg)
Vyvanse	20-30	qam	N/A†	N/A†	60-70‡	60-70‡	“Not yet known”

* According to the AACAP Practice Parameter for ADHD (Pliszka et al., 2007)

** Per Health Canada, 54 mg in youth ≥6 yrs and 72 mg in adults; however, the FDA allows up to 72 mg (not to exceed 2 mg/kg/day) in adolescents 13-17 yrs and 72 mg (no weight-based max) in adults 18-65 yrs

*** 60 mg in youth ≥6 yrs and 80 mg in adults (not to exceed 1 mg/kg/day)

† Dose ranges by weight have not been described, but note that 1 mg of Vyvanse (lisdexamfetamine) is converted into about 0.3 mg of d-amphetamine (Boellner et al., 2010)

‡ Per Health Canada, 60 mg in youth ≥6 yrs and adults; per the FDA, 70 mg in youth ≥6 yrs and adults



Treatment: What does the evidence say?



- Multimodal Treatment Study of Children with ADHD (MTA Study)
 - Landmark, multisite RCT trial in pediatric psychiatry looking at treatment of ADHD
 - Four comparison arms
 - Medication management (methylphenidate IR)
 - Intensive behavioral management
 - Combined Treatment (medication and behavioral mgt)
 - Community Care



Treatment: What does the evidence say?



- MTA Study Results
 - All four groups improved, those that included medication improved the most in terms of core ADHD symptoms
 - Parent and child satisfaction rated the highest if behavioral management was part of the treatment plan

Summary

- ADHD is a common childhood illness
- It is important to take information from several sources when formulating your diagnosis
- Behavioral management and stimulant medication are first line treatments for ADHD
- MTA was a landmark study in the treatment of ADHD which has important implications when deciding on treatment plans

References

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