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CLINICAL PRACTICE CAPSULE

Recommendations for the Treatment of Attention-Deficit/Hyperactivity Disorder (ADHD)

By Thuy Le, PharmD Candidate 2017; Craig S. Stern, RPh, PharmD, MBA, FASCP, FASHP, FICA, FLMI, FAMCP, FCPhA, CSP

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ABOUT CLINICAL PRACTICE CAPSULES
Clinical Practice Capsules (CPC) are short summaries of diseases and syndromes written for all prescribers. The CPCs contain a description of the disease/syndrome, diagnostic criteria, treatment algorithms including options and prices. We welcome submissions from all students and practicing pharmacists. Visit www.cpha.com/journal for more examples.

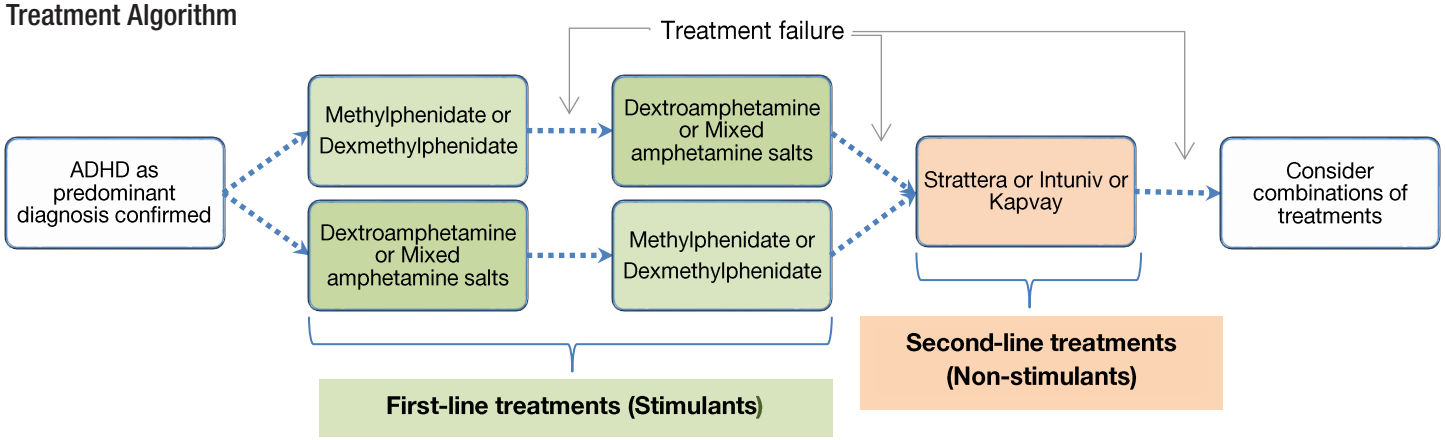
Diagnosis and Evaluation

The diagnosis of attention-deficit/hyperactivity disorder (ADHD) is made based on the diagnostic criteria outlined in the Diagnostic and Statistical Manual of Mental Disorders – Fifth Edition (DSM-5). A diagnosis includes:

- Significant impairment in two or more major settings (e.g., home, school, work) for at least six months
- Symptoms onset occurred between 4 and 18 years of age
- Documentation of the symptoms by parent, teacher, and clinician
- Evaluation for coexisting conditions
  - Learning disability, oppositional defiant disorder, anxiety, depression, autism spectrum disorder, tics, sleep apnea
- ≥ Six symptoms of inattention and hyperactivity-impulsivity persisting for at ≥ six months (≥ five symptoms in patients ≥ 17 years old)

Inattention	Hyperactivity and Impulsivity
Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or during other activities	Often interrupts or intrudes on others (e.g., butts into conversations or games)
Often has trouble holding attention on tasks or play activities	Often leaves seat in situations when remaining seated is expected
Often does not seem to listen when spoken to directly	Often unable to play or take part in leisure activities quietly
Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (e.g., loses focus, gets sidetracked)	Often runs about or climbs in situations where it is not appropriate (adolescents or adults may be limited to feeling restless)
Often has trouble organizing tasks and activities	Is often “on the go,” acting as if “driven by a motor”
Often avoids, dislikes, or is reluctant to do tasks that require mental effort over a long period of time (such as schoolwork or homework)	Often talks excessively
Often loses things necessary for tasks and activities (e.g., school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones)	Often blurts out an answer before a question has been completed
Is often easily distracted	Often has trouble waiting his/her turn
Is often forgetful in daily activities	Often fidgets with or taps hands or feet or squirms in seat

Treatment Algorithm



Treatment Options

Medications are indicated in patients six years and older unless noted. Baseline symptoms should be documented using video recordings and/or clinician rating scales (e.g., ADHD Rating Scale IV, Vanderbilt ADHD Diagnostic Scale) to monitor for therapeutic and adverse outcomes.

STIMULANTS Immediate-release formulations are lower in cost, with less insomnia and growth effects than extended-release options. Food can delay absorption and decrease bioavailability by 10-30%.
ADRs: GI upset, headache, reduced appetite/weight loss, insomnia, irritability, cardiovascular risk (monitor ECG)

Medication	Frequency	Dose (Initial)	Notes	Cost*
Methylphenidate ER	**QD**	*CONCERTA®* **Adults**: 18-36 mg PO **Children & adolescents:** 18 mg PO *METADATE CD® or RITALIN LA®:* 20 mg PO	Methylphenidate dose vs. Concerta dose • 10-15 mg/day = 18 mg/day • 20-30 mg/day = 36 mg/day • 30-45 mg/day = 54 mg/day (max dose in children) • 40-60 mg/day = 72 mg/day (max dose in adolescents & adults)	$6-8
Dexmethylphenidate ER (Focalin XR®)	**QD**	**Adults:** 10 mg PO **Children:** 5 mg PO	• Max dose: 40 mg/day in adults 30 mg/day in children	$8
Methylphenidate transdermal (Daytrana®)	**QD**	10 mg for 9 hrs	• Max dose: 30 mg for 9 hrs QD • No additional benefit in 30 mg vs 20 mg patch	$12
Methylphenidate ER oral suspension (Quillivant XR®)	**QD**	20 mg PO	• Available as 25mg/5mL suspension • Max dose: 60 mg/day	$5/mL
Mixed amphetamine salts ER (Adderall XR®)	**QD**	10 mg PO	• Max dose: 30 mg/day	$6
Lisdexamfetamine (Vyvanse®)	**QAM**	30 mg PO	• Less potential for abuse than other stimulants • Max dose: 70 mg/day	$10
Mixed amphetamine salts IR (Adderall®)	≥ **6yo: QD**-BID **3-5yo: QD**	≥ **6yo:** 5 mg PO QD-BID **3-5yo:** 2.5 mg PO **QD**	• Max dose: 60 mg/day in patients ≥ 13yo, 40 mg/day in patients 3-12yo	$2
Dextroamphetamine ER tablets/solns (Dexedrine®/Dextrostat®)	≥ **6yo: QD**-BID **3-5yo: QD**	≥ **6yo:** 5 mg PO QD-BID **3-5yo:** 2.5 mg PO **QD**	• Max dose: 60 mg in patients ≥ 13yo 40 mg in patients 3-12yo	$5
Dextroamphetamine ER capsules (Dexedrine Spansule®)	**QD**-BID	**6-16yo:** 5 mg PO	• Max dose: 40 mg	$5
Dexmethylphenidate IR (Focalin®)	BID	2.5 mg PO	• Max dose: 20mg/day • Converting from methylphenidate: give 50% of daily methylphenidate dose	$2
Methylphenidate IR[a] **(**Ritalin®)	**Adults:** BID-TID ≥ **6yo:** BID	**Adults:** 10 mg PO BID-TID ≥ **6yo:** 5 mg PO BID	• Max dose: 60 mg/day	$1

NON-STIMULANTS Less effective than stimulants but no abuse potential, less growth effects, and less sleep disturbance
May take 1-2 weeks for initial effects

Medication	Frequency	Dose (Initial)	Notes	Cost*
Atomoxetine (Strattera®)	**QAM**	**< 70 kg:** 0.3-0.5 mg/kg ≥ **70 kg:** 40 mg/day	• *ADRs:* nausea, anorexia, ↑BP, insomnia, fatigue • **BBW:** Monitor for suicidal ideation • Max dose: ○ < 70 kg: 1.4 mg/kg/day (max 100 mg/day) ○ ≥ 70 kg: 100 mg/day	$16
Guanfacine ER (Intuniv®)	**QD**	**6-18yo:** 1 mg PO	• Max dose: 4 mg/day • Do not D/C abruptly (reduce dose by 0.5 mg Q3-7 days)	$11
Clonidine ER (Kapvay®)	**QHS**	**6-18yo:** 0.1 mg PO	• Max dose: 0.4 mg/day • Do not D/C abruptly (reduce dose by 0.05 mg Q3-7 days)	$5

*Pricing is based on the lowest AWP Unit Price of all generic formulations.
[a] Doses 2.5-30 mg/day have been studied in children 3-5 yo.

About the Authors

Thuy Le is a 2017 dual PharmD and MS in Healthcare Decision Analysis candidate at the USC School of Pharmacy. Conflict of Interest Disclosure: None reported.

Craig S. Stern, RPh, PharmD, MBA, FASCP, FASHP, FICA, FLMI, FAMCP, FCPhA, CSP is the president of Pro Pharma Pharmaceutical Consultants in Chatsworth, CA, a professor pharmacy at the University of Southern California, University of California, San Francisco and Western University of Health Sciences, and an adjunct professor and preceptor at the University of the Pacific. He is a fellow of the Academy of Managed Care Pharmacy, the American Society of Consultant Pharmacists and the American Society of Health-System Pharmacists. Conflict of Interest Disclosure: None reported.

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