

ADHD Treatment: What's New in 2013?



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Overview

- Algorithm for treatment
 - Differential diagnoses
 - Comorbidity management
- What's New?
 - Synergistic medication strategies
 - Treatment Adherence
 - New formulations
 - Comprehensive treatment approach including non-medical interventions

STEPS FOR ADHD DX AND RX

- Confidence about the diagnosis
 - ☐ contact with other informants, especially other caregivers, extended family
 - ☐ examples of schoolwork, report cards, teacher comments, rating scales
 - ☐ DON'T feel pressure to write a prescription on the first visit!

Differential Diagnosis

- Learning Disorders
- Mood Disorders
- Anxiety Disorders, PTSD
- Chaotic Environment
- Abuse or Neglect
- Family Stress
- Developmental Disorders

Differential Diagnosis

- Peer conflicts, bullies
- Thyroid disease
- Epilepsy, especially absence seizures
- Visual or Auditory Problems
- Sleep Apnea
- Use of other medications
 - steroids
 - MDI?

STEPS FOR ADHD DX AND RX

- Assess suitability for medication
 - ☐ Have other treatment strategies or behavior modifications been attempted and deemed ineffective?
 - ☐ Are parents ready and willing to have a “medication trial”?
 - ☐ Appropriate risk/benefit profile

Three Components of ADHD Treatment

Psychosocial interventions



Education

Medication

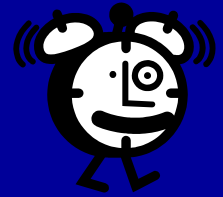
Education of Patients and Family

- Understanding the disorder
 - Medical cause
 - Not due to poor parenting
 - stop “blaming” the child
- ADHD-friendly modifications in family, work, leisure activities
- Parent support groups: for example, www.chadd.org, www.add.org

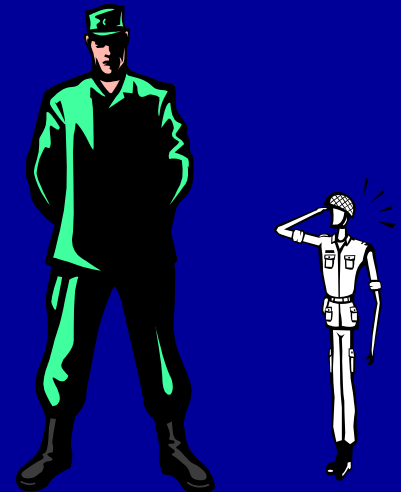
Psychosocial Interventions in ADHD Treatment

- Behavioral Modification
 - structure and predictable routines
 - reward systems
 - consistency in limit setting
 - daily and even hourly “report cards”
- Social skills Training:
 - conflict-resolution, problem solving in a naturalistic setting
 - School counselors, social skills groups
- Academic skills training
 - rearrange classroom seating to reduce stimulation and distractions
 - Flexibility with deadlines, untimed tests

Time management



- 3:30 Arrive home, place backpack on desk
- 3:35 unpack backpack, open book, place first worksheet on desk
- 3:40 have a snack, relax
- 4:00 sharpen pencil, go back to desk, work
- 4:15 take a break, stretch
- 4:20 go back to desk, complete assignment, before leaving desk, take out next assignment and place on desk
- 4:45 take a longer break, stretch
- 5:00 go back to desk
- 5:15 take a break, stretch
- 5:30 30 minutes TV
- 6:00 Dinner



STEPS FOR ADHD DX AND RX

- Medication Options

- ☐ Ok to let families help to select
- ☐ Identify clear target symptoms and duration of “trial”
- ☐ Start with a low dose to assess tolerability
- ☐ If well tolerated but limited efficacy, increase dosage weekly

Homework for parents

- AACAP medication guide
- Offer three or four options
- Go home and research
- Return with questions
- Treat all treatment as a “trial”

FDA-Approved Medications Indicated for ADHD in Children or Adolescents

Stimulants

Brand Names

d,l-methylphenidate

Ritalin[®], Ritalin LA[®], Concerta[®],
Metadate[®] CD, Methylin[®] ER,
Daytrana[™], Quillivant XR[™]

d-methylphenidate

Focalin[®], Focalin XR[®]
(dexmethylphenidate HCl)

Mixed amphetamine salts

Adderall[®], Adderall XR[®]

d-amphetamine

Dexedrine[®], Dexedrine Spansule[®],
Vyvanse[™]

Nonstimulant

Clonidine

Catapres[®], Kapvay[®]

Guanfacine

Tenex[®], Intuniv[®]

Atomoxetine

Strattera[®]

STEPS FOR ADHD DX AND RX

- Follow-up

- ☐ return to clinic within 1 month to assess initial response
- ☐ return to clinic quarterly, at least for the first 6 months of treatment
- ☐ follow-up rating scales

School Support

- 504 plan:
 - Seating at the front of the class
 - Flexible deadlines
 - Untimed tests, in separate location if nec.
 - Help with assembling materials
 - Extra copy of textbooks to keep at home

School Support

- IEP:
 - Resource support
 - Tutors
 - Social skills group
 - Counselor sessions
 - Self-contained classroom
 - Lower student to teacher ratio

Case 1

- 7 year old male, ADHD, good treatment response
- Emergent appointment—suspended from school because of a fight
- “Obviously, medicine not working”

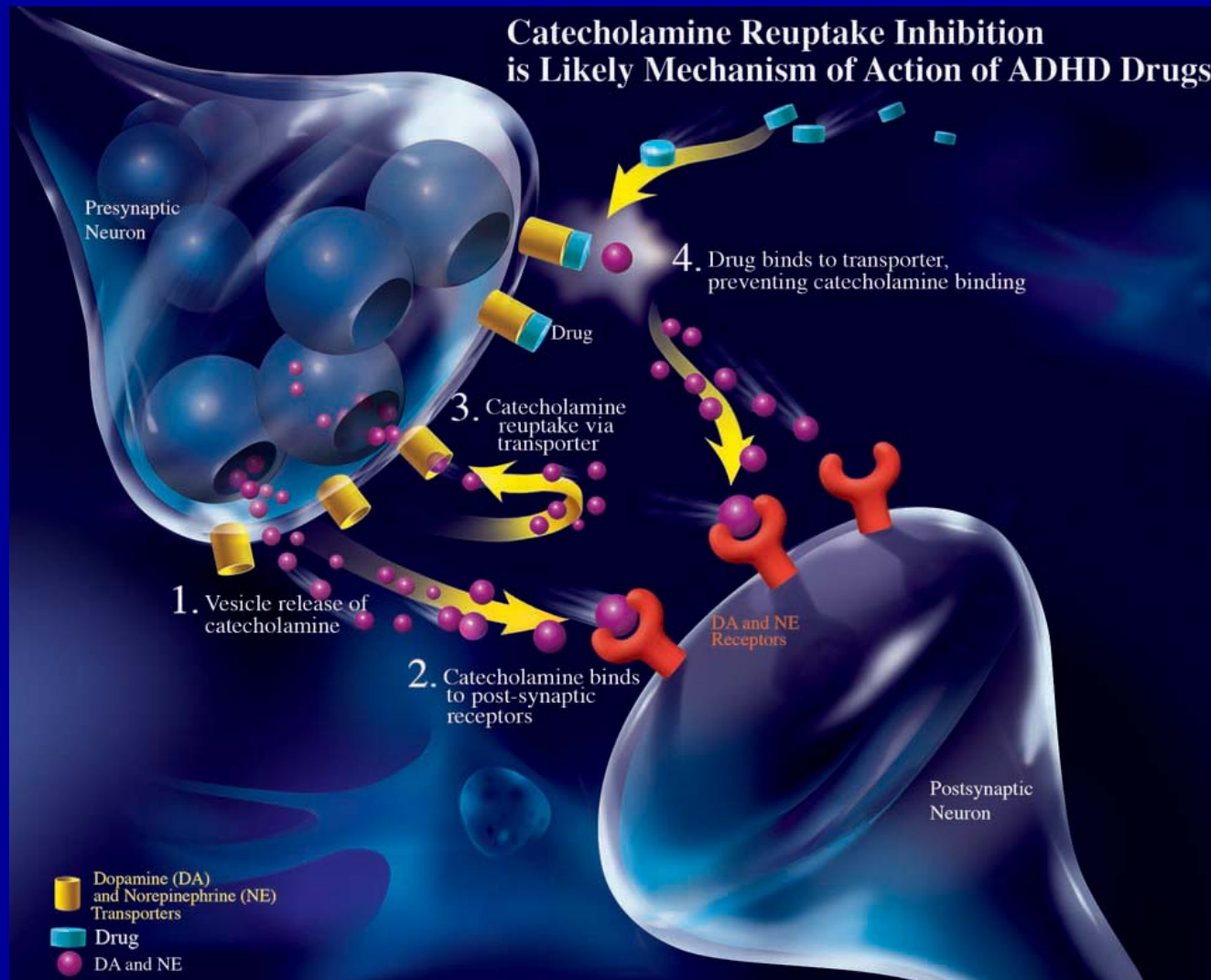
Case 1

- Queries:
 - As a rule, “It is always something.”
 - Extract details, “Just the facts”
 - Treatment adherent?
 - Timing?
 - New teacher/student/aide?
 - Bully situation?
- Self-limited or reflective of an overall trend?
 - Offer to call principal

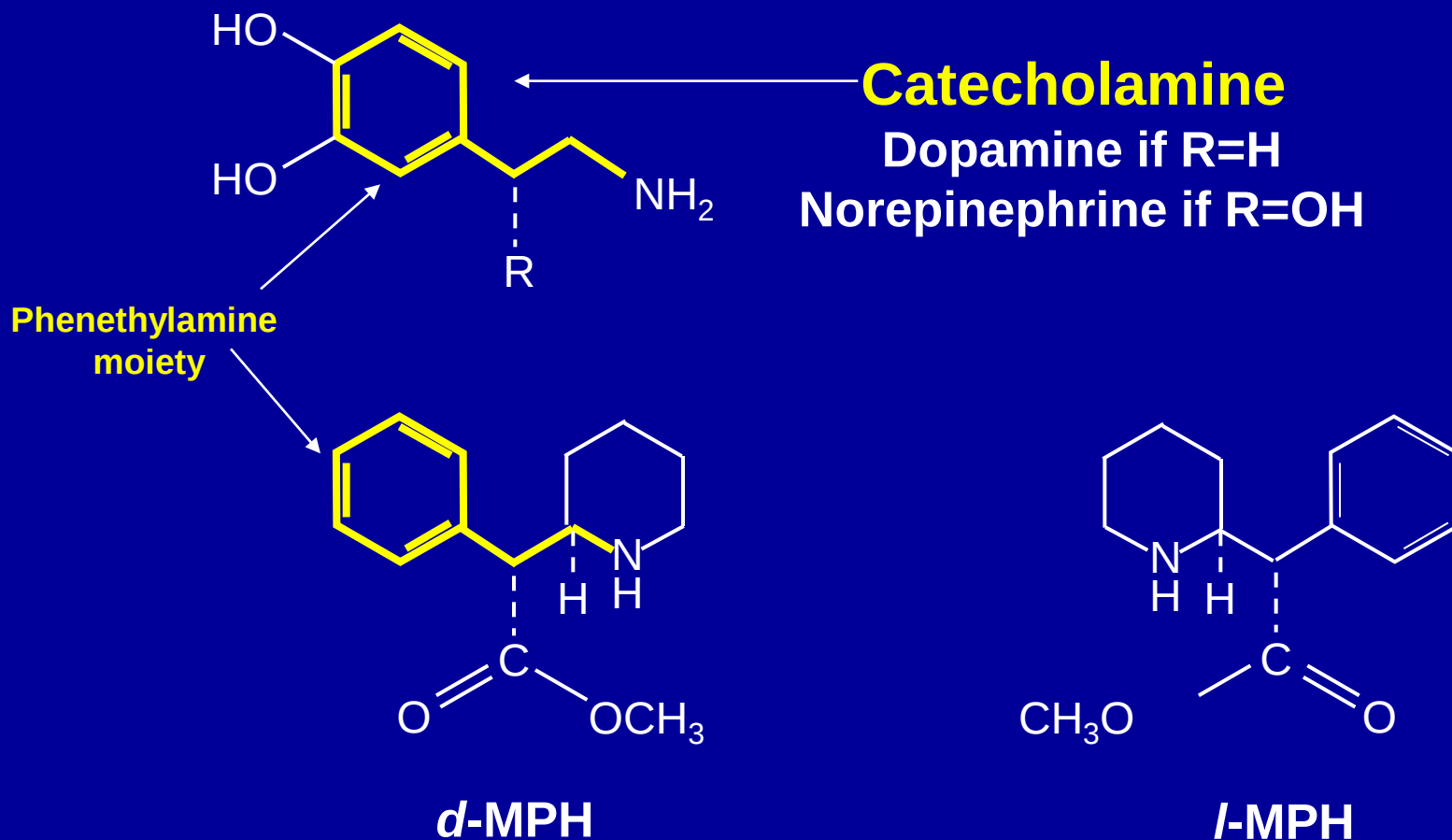
Synergy

- 4 main options:
 - Increase dosage—may allow 1-2 hours increased duration of effect
 - Switch to new stimulant, maybe in different class
 - Add additional short acting medicine, either early or late in the day
 - Add an adjunct medicine, e.g. alpha-2 agonist

Catecholamine Reuptake Inhibition Is a Likely Mechanism of Action of ADHD Drugs



Catecholamine Structure



Genetics of Childhood Disorders: XIX. ADHD, Part 3: Is ADHD a Noradrenergic Disorder?

JOSEPH BIEDERMAN, M.D., AND THOMAS J. SPENCER, M.D.

- **Attention** and **vigilance** depend on adequate modulation by catecholamine neurotransmitters of prefrontal, cingulate, and parietal cortices, thalamus, striatum, and hippocampus.
 - These brain networks all have a high density of catecholamine terminals.
- **noradrenaline** as well as **dopamine** are potent agonists at the D4 receptor, a gene that has been implicated in the etiology of ADHD

Genetics of Childhood Disorders: XVIII. ADHD, Part 2: Norepinephrine Has a Critical Modulatory Influence on Prefrontal Cortical Function

Arnsten A, *JAACAP*, Volume 39(9), September 2000, pp 1201-1203

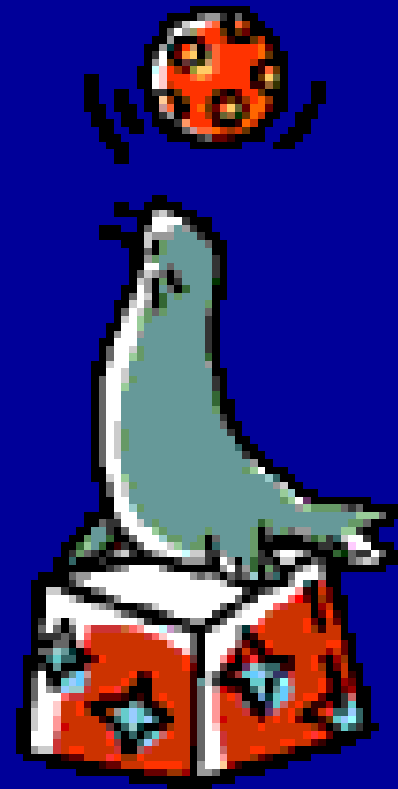
- NE axons from cells of the locus ceruleus terminate throughout the PFC with moderate density.
- Selective depletion of NE in the forebrain makes animals more distractible.
- Both [alpha]2-agonists and NE reuptake blockers may serve to normalize NE transmission in the PFC and thus enhance PFC function.

Role of Serotonin in the Paradoxical Calming Effect of Psychostimulants on Hyperactivity

Gainetdinov RR et al., *Science*, Volume 283(5400), 15 January 1999, pp 397-401

- Mice lacking the gene encoding the plasma membrane dopamine transporter (DAT) have elevated dopaminergic tone and are hyperactive.
- Administration of fluoxetine markedly attenuated the activity of the DAT-KO mice
- importance of a relative balance of the 5-HT and DA systems for normal motor activity.

DA,
5HT,
NE
all in balance



ADHD PROGRAM AT CNMC

- Comprehensive psychiatric assessment.
- Answer the question, “Is it ADHD or not?”
- Receive advice on how to optimize treatment strategies.
- Call 202-476-4172
- Request an Intake Packet for the ADHD Program.

