ADHD Part II: Managing Comorbities

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Financial Disclosure

- I have no relationships to disclose

Off-Label Use of Medications

- This talk discusses the off-label use of medications
- Each off-label medication is clearly labeled in talk
- Clinical guidelines generally followed
  - Deviations from guidelines clearly discussed
- Discussion of off-label medications should not be construed as encouraging the use of these medications for other than FDA-indicated uses

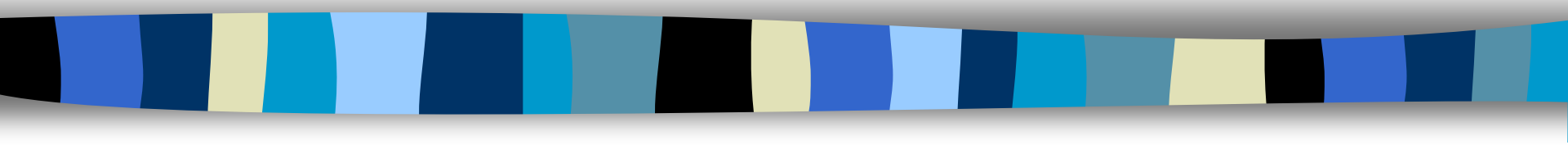
Caveats

- Information and slides carefully reviewed prior to presentation
- Information presented here should not be assumed to be error-free
- Please consult standard references for full details regarding medications, doses, contraindications, etc.

Overview

- ADHD
- ADHD
  - With disruptive sx
  - With anxiety
  - With depression
  - With bipolar d/o
  - With substance abuse
  - With learning disabilities
  - With tics
- Conclusion

ADHD



ADHD: Symptoms

- Inattentive sx
- Hyperactive sx
- Impulsive sx

ADHD: Inattentive Sx*

- Poor attention/makes careless mistakes
- Can't focus on tasks
- Doesn't seem to listen when spoken to
- Trouble following directions
- Poor organization/task completion
- Avoids tasks requiring mental effort
- Losing things necessary for tasks
- Easily distracted
- Often forgetful

*Modified from DSM-IV-TR criteria which should be consulted for full details.

ADHD: Hyperactive/Impulsive Sx*

- Fidgets/squirms
- Gets up from seat when being seated expected
- Excessive running/climbing (or subjective restlessness)
- Difficulty with quiet tasks
- Often “on the go”
- Talks excessively
- Blurting out inappropriate things, answers before question is finished
- Difficulty waiting turn
- Interrupts/intrudes on others

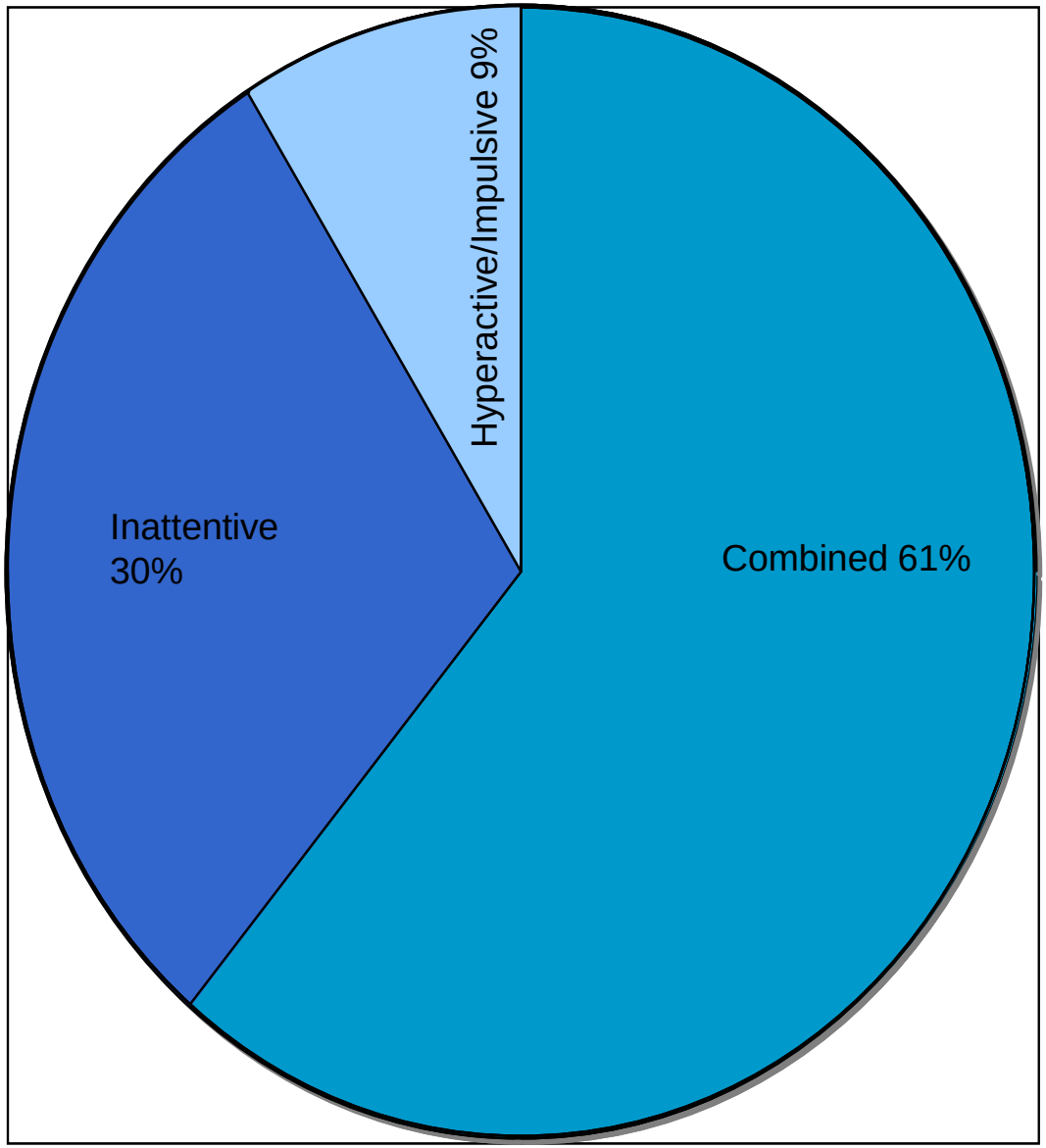
*Modified from DSM-IV-TR criteria which should be consulted for full details.

ADHD: Diagnosis*

- Inattentive Subtype: 6 or more sx
- Hyperactive/Impulsive sx: 6 or more sx
- Combined type: meet both criteria above
- Some sx present before age of 7
- Not due to medical condition, substance, or better explained by other psychiatric condition

*= Modified from DSM-IV-TR which should be consulted for full diagnostic criteria.

ADHD



Faraone et al. J Am Acad Child Adol Psychiatry 1998;37:185-193.

ADHD

- Prevalence rates: 4-12%
- Male:Female 2.5-5:1
  - Referral bias?
  - Girls: inattentive subtype
- 55-90% monozygotic twin concordance
- As heritable as height

ADHD and Health

- Asthma
- Major injuries
- Bicycle accidents: 50% greater
- ER visits: 33% greater
- Car accidents: 2-4 times greater
- Healthcare costs: twice those of controls

- Poor peer relationships
- Sex earlier
- More sexual partners
- More teen pregnancy
- Accidents/injuries
- Accidental poisoning

Liebson CL, Katusic SK et al. Use and costs of medical care for children with and without attention deficit hyperactivity disorder.JAMA 2001;285:60-66

Barkley, RA, Fischer M, Smallish L et al. Data from Milwaukee Young Adult Outcome Study (manuscript submitted)

ADHD: Impact of Untreated & Under-Treated ADHD

Health Care System

50% ↑ in bike accidents[1]

33% ↑ in ER visits[2]

2-4 x more motor vehicle crashes[3-5]

Patient

Family

3-5x ↑ Parental Divorce or Separation[11,12]

2-4 x ↑ Sibling Fights[13]

School & Occupation

46% Expelled[6]

35% Drop Out[6]

Lower Occupational Status[7]

Society

Substance Use Disorders:

2 X Risk[8]

Earlier Onset[9]

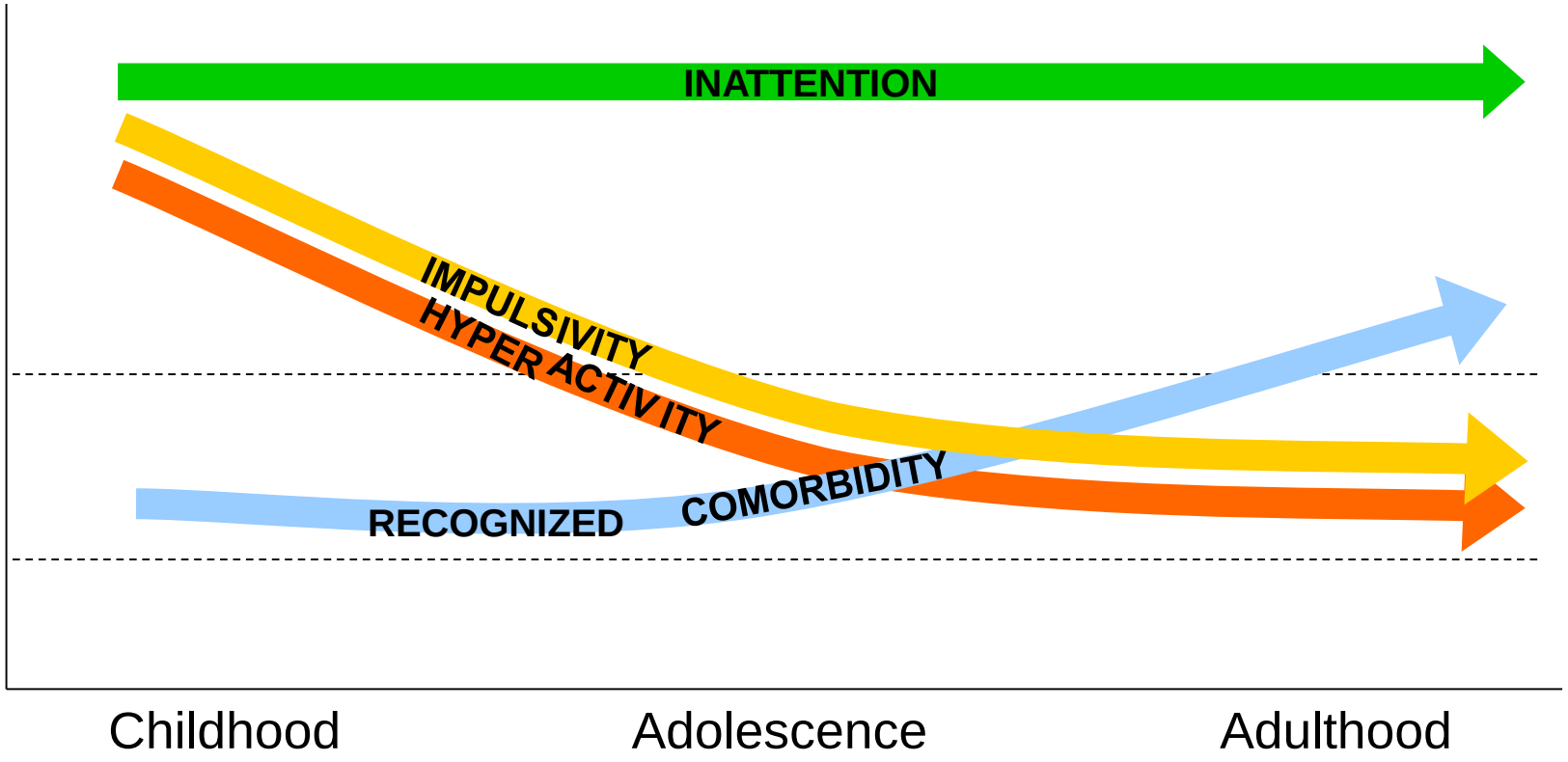
Less Likely to Quit in Adulthood[10]

Employer

↑ Parental Absenteeism[14] and Productivity[14]

1. DiScala et al., 1998.
2. Liebson et al., 2001.
3. NHTSA, 1997.
4-5. Barkley et al., 1993; 1996.
6. Barkley, et al., 1990.
7. Mannuzza et al., 1997.
8. Biederman et al., 1997.
9. Pomerleau et al., 1995.
10. Wilens et al., 1995.
11. Barkley, Fischer et al., 1991.
12. Brown & Pacini, 1989.
13. Mash & Johnston, 1983.
14. Noe et al., 1999.

ADHD Developmental Trends by Age



Wasserstein. JCLP 2005. Mick et al. Psychiatr Clin N Am 2004.

ADHD and Disruptive Behavior Disorders

ADHD and Disruptive Behaviors

- Disruptive Behaviors:
  - Oppositional Defiant D/O
  - Conduct D/O
  - Disruptive Behavior D/O NOS
- ADHD: 54-84% with significant disruptive behaviors

ADHD with DBDs: Treatment

- ADHD + Disruptive Sx: anti-ADHD effects of stimulants equal to ADHD alone
- ?Disruptive sx treated by stimulants
  - Conflicting studies
  - Clinical lore: improve but not remit
- Additional Treatment
  - Behavioral interventions
  - Medication

ADHD and DBDs: Medications

- Practice guidelines: addition of atypical antipsychotic
- Clinical practice: evaluate severity of sx
  - Mild: ADHD treatment alone
  - Moderate: consider alpha-2 agonist
  - Severe: atypical antipsychotic and consider referral
  - Refractory: comorbid conditions and refer

Alpha-2 Agonists

- Catapres (clonidine)*
- Tenex (guanfacine)*
- Intuniv (guanfacine ER)
- Kapvay (clonidine ER)

- Old antihypertensives
- Aggression
- Anger dyscontrol
- Tics
- Poor sleep

*= Not FDA approved for ADHD treatment

Catapres (clonidine)*

- Oral: 0.1mg; 0.2; 0.3mg
- Kapvay (clonidine ER): 0.1 and 0.2mg
- TTS Patch: 1, 2, 3
  - Doses do NOT refer to dose in mg!
  - Rashes: generally due to patch, not medication
- Very potent agent
- Greater risk of:
  - Sedation
  - Orthostasis
  - Rebound hypertension

*= Not FDA approved for ADHD treatment

Guanfacine

- Tenex (guanfacine)*: 1, 2mg
- Intuniv (guanfacine ER): 1, 2, 3, 4 mg
- More selective for adrenergic receptor alpha subtype 2_A
  - Improved focus
  - Less side effects

*= Not FDA approved for ADHD treatment

Alpha-2 Agonists: Side Effects

- Sedation
- Orthostasis
- Worsened mood
- Nightmares
- Rebound hypertension
- Cardiac issues
  - Consider ECG if:
    - Combine with stimulant
    - Taking other agent with cardiac issues

ADHD: Alpha-2 Agonists

Agent	Doses	Frequency	Starting	Max/Day	Notes
clonidine*	0.1, 0.2, 0.3 mg	IR: TID-QID TTS: 4-7 days	<45kg: 0.05mg QHS >45kg: 0.1mg QHS	27-40.5kg: 0.2mg 40.5-45kg: 0.3mg >45kg: 0.4mg	Titrate up by 0.05mg q1-2 weeks Dosing usually TID-QID Taper gently if d/c
guanfacine Tenex= IR* Intuniv= ER	IR: 1, 2mg ER: 1, 2, 3, 4 mg	IR: BID-QID ER: daily	<45kg: 0.5mg QHS >45kg: 1mg QHS	27-40.5kg: 2mg 40.5-45kg: 3mg >45kg: 4mg	Titrate up by 0.5mg q1-2 weeks Dosing BID-QID Taper if d/c

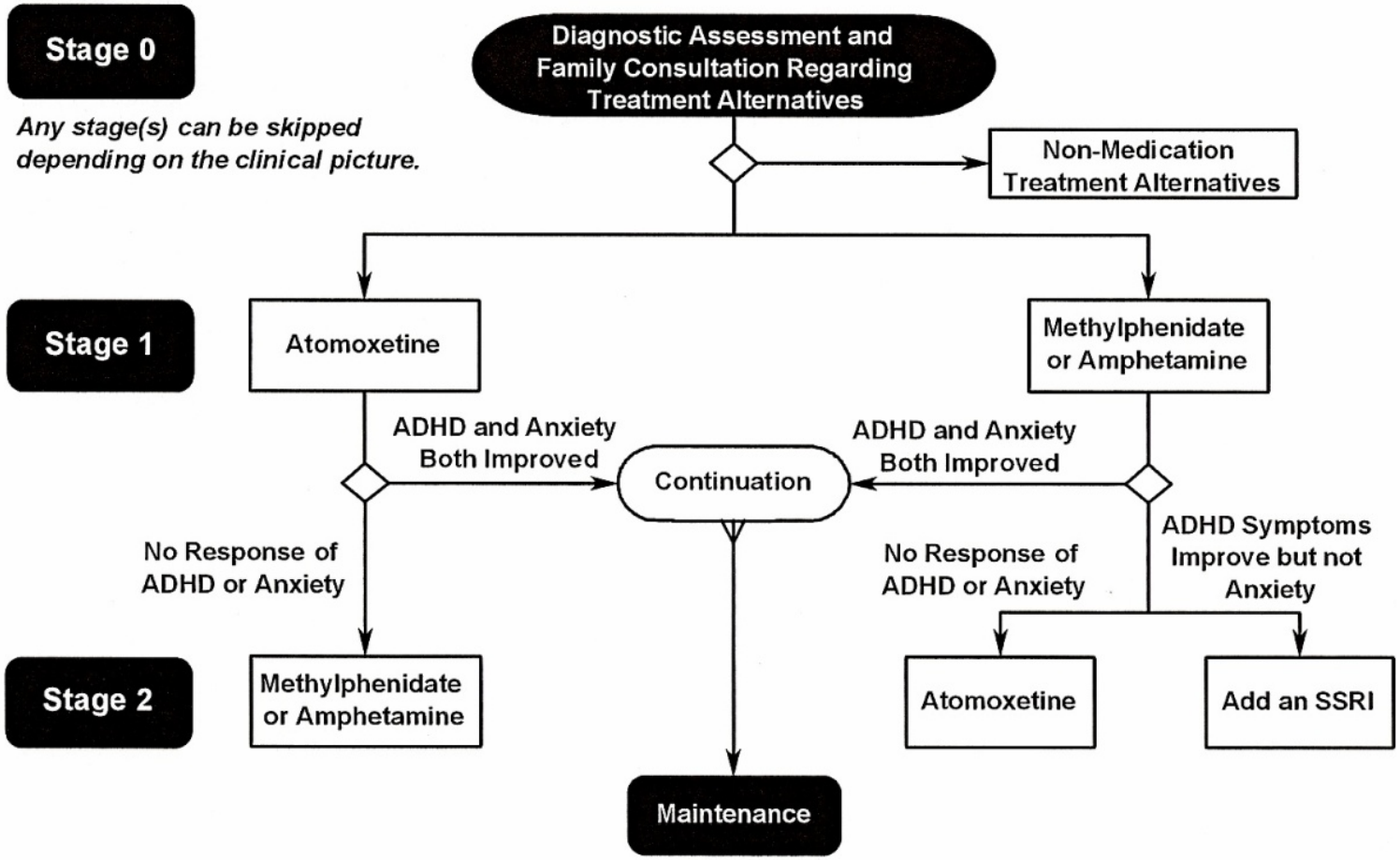
*= Not FDA approved for ADHD treatment

ADHD and Anxiety

- ADHD: up to 1/3 with significant anxiety
- Fear of worsening anxiety with ADHD treatment
- Inattention or anxiety?

CMAP ADHD revision

Algorithm for the Pharmacological Treatment of ADHD with Comorbid Anxiety Disorder, revised 2005.



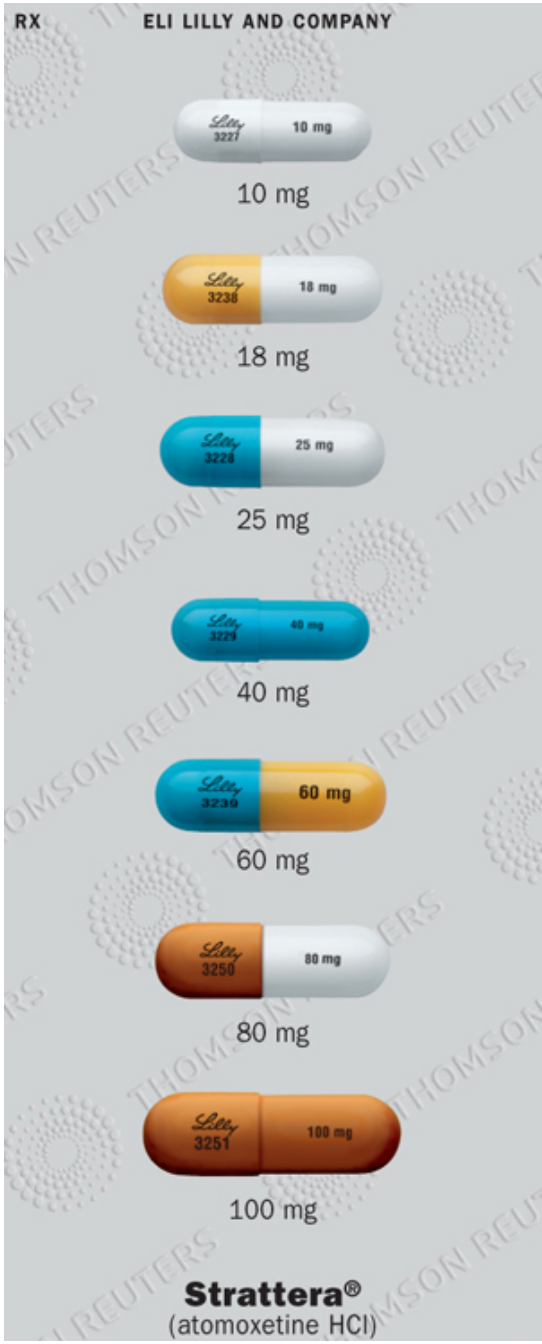
ADHD = Attention Deficit Hyperactivity Disorder
SSRI = Selective serotonin reuptake inhibitor

Strattera (atomoxetine)

- Non-stimulant
- Children/Adolescents/Adults
- Inhibits norepinephrine transporter
- Takes 4-6 weeks to see full effect
- Little Antidepressant That Couldn’t

Strattera (atomoxetine)

- Starting dose: 0.5mg/kg/day
- Average dose: 1.2mg/kg/day
- Maximum dose: 1.4mg/kg/day or 100mg--whichever is less
- Lower doses with:
  - Prozac (fluoxetine)
  - Paxil (paroxetine)



Strattera (atomoxetine)

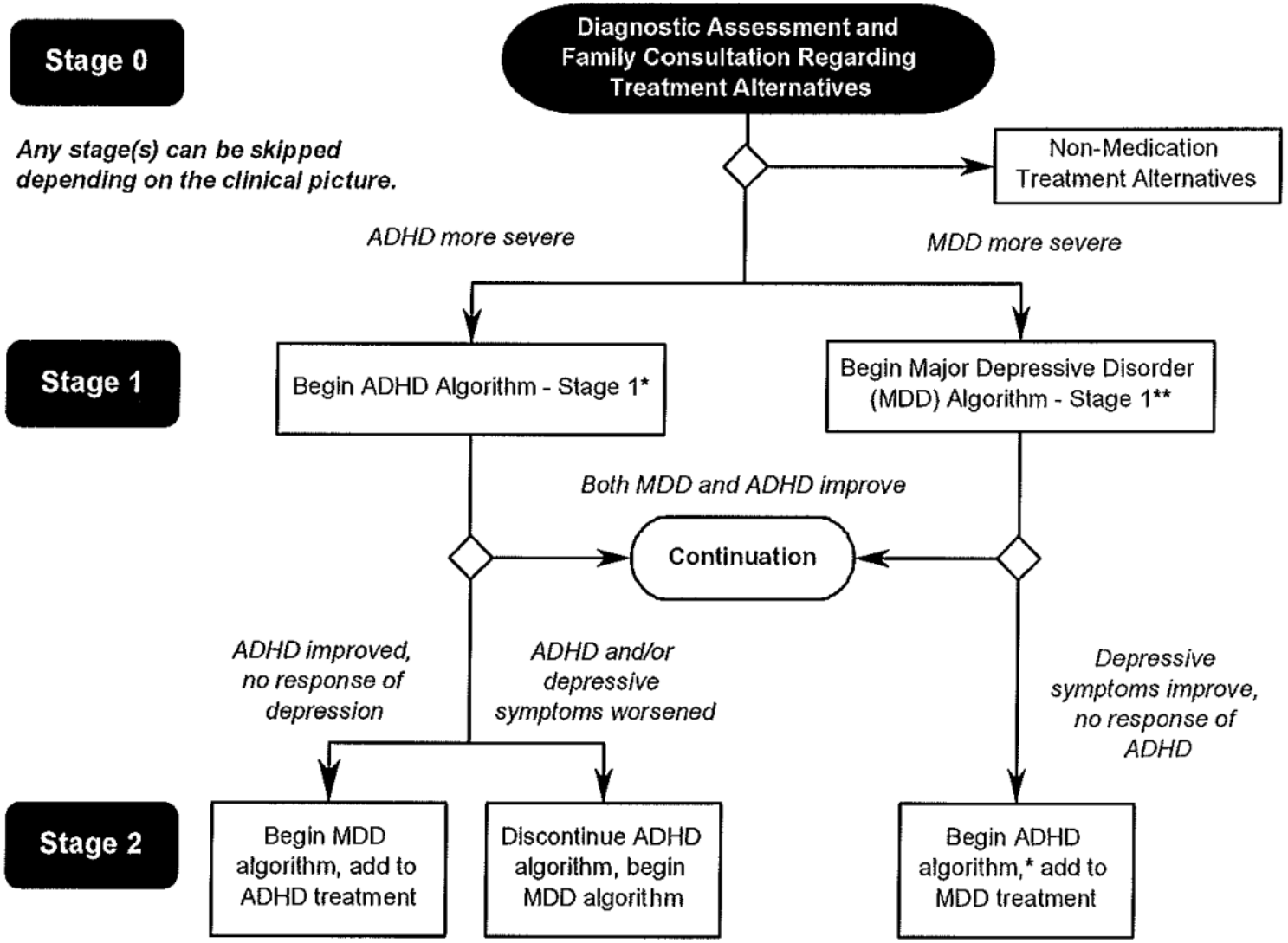
- Versus Stimulants:
  - Lower response rate
  - Among responders, less robust response
- Second line agent
- May be first line:
  - Substance abuse
  - Anxiety
  - Tics
- Side effects
  - Common: sedation, nausea
  - Rare but serious: suicidality, hepatotoxicity

ADHD and Depression

- Rates very controversial
- Studies range from 0-33%
- Depression: concentration impairment
- ADHD: low self-esteem

Algorithm for ADHD Comorbid with Major Depressive Disorder

CMAP ADHD revision



ADHD and Depression (con't)

- ADHD: responds faster than MDD
- MDD requires medication and mild ADHD sx: consider Wellbutrin*
- Caution: Prozac (fluoxetine) and Paxil (paroxetine) raise Strattera (atomoxetine) levels

ADHD: Other Agents

Agent	Doses	Frequency	Starting	Max/Day	Notes
bupropion/ budeprion*	IR: 75, 100mg SR: 100, 150, 200 mg XL: 150, 300 mg	IR: BID-TID SR: BID XL: daily	Lesser of 3mg/kg/day or 150mg	Lesser of 6mg/kg/day or 300mg (AACAP) 450mg (clinical practice)	Do not use: seizures, head injuries, bulimia IR: can be cut SR/XL: cannot be cut
Provigil (modafanil)*	100mg 200mg	Daily-BID	100mg	400mg?	Risk of rash, including SJS

*= Not FDA approved for ADHD treatment

Wellbutrin- Contraindications

- Seizures
- Severe head injuries
- Bulimia
- Electrolyte D/O
- Currently using Zyban
- Caution if severe anxiety
- May worsen essential tremor

ADHD and Bipolar D/O

- Stabilize mood prior to adding on ADHD treatment
- Often difficult to differentiate ADHD and Bipolar D/O sx
- Should be stabilized and likely managed as well by psychiatrist

ADHD and Substance Abuse

- Smoking: 15-19%
- Greatly increased risk of substance abuse
- Treating ADHD reduces risk of substance misuse disorders to baseline
- Consider non-stimulant options

ADHD and Learning Disabilities

- Learning/Speech Problems: 25-35%
- Consider if pt appears capable of focusing, but is inattentive/disruptive only at school
- Dx requires formal achievement testing
  - Usually done by school

ADHD and Tics

- Very common
- Fearful of starting stimulants
- Many pts actually have improvement in tics with ADHD treatment
- Not every tic needs treatment
- Consider Strattera
- Consider alpha-2 agonists before neuroleptics unless very severe

Conclusion

- Comorbidity very common
- Careful evaluation of which sx are most impairing

Contact Information

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