Oral Health Fact Sheet for Dental Professionals

Adults with Attention Deficit Hyperactivity Disorder

Attention deficit hyperactivity disorder is a behavior disorder with developmentally inappropriate inattention, impulsivity, and hyperactivity. (ICD 9 code 314.01)

Prevalence

- National Comorbidity Survey Replication reports 4.4%. Diagnosis is based on symptoms, and establishing the symptoms began in childhood.
- 61.6% males

Comorbid conditions

- Mood disorders 19–37% (Depression, Dysthymia, Bipolar disorder)
- Anxiety disorders 25–50% (Post-traumatic stress disorder 13.4%)
- Drug abuse 32–53%. Cocaine is a common drug of choice.

Manifestations

Clinical

- Medical management of ADHD reduces symptoms by 50–75%; therefore most patients can be seen without any modifications.
- Presentation is variable: inattentive, hyperactive, or inattentive/hyperactive types.
- Impulsivity, cognitive inflexibility, hyperactivity, short attention span, aggression, and difficulty with listening, compliance, task completion, work accuracy, and socializing.
- Complete history taking and follow-up of suspected substance abuse, due to the potential for serious adverse events and medication interactions. Request consent to refer to physician for consult and management as needed.

Oral

- Decreased attention span→ poor oral hygiene→ potential for increased caries and periodontal disease
- Bruxism
- Higher risk for dental/oral trauma due to increased rates of automobile accidents (inattention, impulsivity)
- Higher risk of periodontal disease and oral cancer due to higher rates of smoking

Other Potential Disorders/Concerns

- Oppositional defiant
- Obsessive-compulsive
- Anxiety
- Conduct
- Tic
- Mood (anxiety, depression, bipolar)

Management

Medication

Prescribed based on symptoms for their intended purpose or used off label for associated conditions.

The list of medications below are intended to serve only as a guide to facilitate the dental professional's understanding of medications that can be used for ADHD or conditions associated with ADHD. Medical protocols can vary for individuals with ADHD from none to multiple medications.

SYMPTOM	MEDICATION	SIDE EFFECTS/DRUG INTERACTIONS
Hyperactivity, Inattention, and Impulsivity	**Stimulants** *Amphetamine & Dextroamphetamine* (Adderall, Dexedrine, Dextrostat)	Xerostomia, increase in heart rate and blood pressure, dysgeusia, bruxism, motor tics, dyskinesias. Adderall and Dextrostat can interact with meperidine and produce fever, hypotension and potentially respiratory collapse. Use vasoconstrictors with caution.
	Methylphenidate, Dexmethylphenidate (Ritalin, Concerta, Focalin)	Xerostomia, increase in heart rate and blood pressure, erythema multiforme, motor tics, dyskinesias.
	Non Stimulants *Atomoxetine* (Strattera)	Xerostomia, increase in heart rate and blood pressure. Local anesthetics with epinephrine may cause severe prolonged hypertension, use with caution. Patients should not be given anesthetics containing the vasoconstrictor levonordefrin (Polocaine, Mepivacaine 2%, Scandonest 2% L) as cardiac dysrhythmia may be produced followed by significant increase in systolic blood pressure.
	Antihypertensives *Clonidine* (Catapres) *Guanfacine* (Tenex, Intuniv)	Xerostomia, dysphagia, sialadenitis, dysgeusia.
Hyperactivity, Inattention, and Repetitive Behaviors	**Atypical antidepressants** *Bupropion* (Wellbutrin)	Xerostomia, dysgeusia, stomatitis, gingivitis, glossitis, bruxism, dysphagia, angioedema. Suicidal risk through age 24. Corticosteroids may increase risk of CNS stimulating seizures.
	TCAs (Tricyclic Antidepressants) *Amitriptyline* (Elavil) *Desipramine* (Norpramin) *Imipramine* (Tofranil)	Xerostomia, dysgeusia, stomatitis, sialadentitis, tongue edema, discolored tongue. Suicidal risk through age 24. Local anesthetics with epinephrine may cause severe prolonged hypertension, use with caution.

Adults with Attention Deficit Hyperactivity Disorder continued

SYMPTOM	MEDICATION	SIDE EFFECTS/DRUG INTERACTIONS
Obsessive-Compulsive Disorder and/or Depression	**SSRIs (Selective Serotonin Reuptake Inhibitor)**	
	Escitalopram (Lexapro) *Fluoxetine* (Prozac) *Paroxetine* (Paxil) *Sertraline* (Zoloft)	Xerostomia, dysphagia, nausea, anxiety, dizziness, nervousness, headache, sweating, bruxism. Suicidal risk through age 24. Do not prescribe with MAOIs.
	SNRIs (Serotonin-Norepinephrine Reuptake Inhibitor)	
	Duloxetine (Cymbalta) *Venlafaxine* (Effexor, Effexor XR)	Xerostomia, dysphagia, nausea, anxiety, dizziness, nervousness, headache, sweating, bruxism. Suicidal risk through age 24. Do not prescribe with MAOIs.
	Atypical antidepressants	
	Bupropion (Wellbutrin)	Xerostomia, dysgeusia, stomatitis, gingivitis, glossitis, bruxism, dysphagia, angioedema. Suicidal risk through age 24. Corticosteroids may increase risk of seizures.
	TCAs (Tricyclic Antidepressants)	
	Amitriptyline (Elavil) *Desipramine* (Norpramin) *Imipramine* (Tofranil)	Xerostomia, dysgeusia, stomatitis, sialadentitis, tongue edema, discolored tongue. Suicidal risk through age 24. Local anesthetics with epinephrine may cause severe prolonged hypertension, use with caution. Patients taking desipramine and imipramine should not be given anesthetics containing the vasoconstrictor levonordefrin (Polocaine, Mepivacaine 2%, Scandonest 2% L) as cardiac dysrhythmia may be produced followed by significant increase in systolic blood pressure.

SYMPTOM	MEDICATION	SIDE EFFECTS/DRUG INTERACTIONS
Aggressive Behaviors	**Anti-psychotics**	
	Olanzapine (Zyprexa) *Risperidone* (Risperdal) *Paliperidone* (Invega)	Xerostomia, sialorrhea, dysphagia, dysgeusia, stomatitis, gingivitis, tongue edema, glossitis, discolored tongue, dyskinesia, dystonia, angioedema.
	Anticonvulsants	
	Carbamazepine (Tegretol) *Valproate* (Depakote, Depakene)	Xerostomia, stomatitis, glossitis, dysgeusia. Excessive bleeding may result when either medication is combined with aspirin or NSAIDs. Valproate-oral petechia.
	Lamotrigine (Lamictal)	Xerostomia (uncommon), angioedema of mouth, lips, tongue, or face.

Behavioral

Guidance:

- Difficulty getting organized, remembering paper work and appointments.
- Schedule appointments in the morning when medications have the maximum effect and when the patient is least fatigued, most attentive, and best able to remain seated in dental chair.
- Give short, clear instructions.
- Determine if breaks are necessary during treatment.
- Consider use of nitrous oxide during treatment to facilitate treatment.
- Ask patient for medication updates at each appointment. Medication changes can affect the appropriate care of the patient from a medical and/or appointment management standpoint.

Drug Interactions with Anesthetics

Adverse interactions with stimulants are possible with many anesthetics used in dentistry resulting in elevated blood pressure and heart rate. Discuss use of medication with patient as many adults use stimulant medication situationally and could schedule dental treatment on a non-medication day or patient should consider delaying morning dose until after the dental appointment. Take vital signs before and during treatment

Dental Treatment and Prevention

- Monitor caries development, onset and progression of periodontal disease, bruxism, and dental/oral trauma.
- Reinforce oral hygiene and help patient form good oral habits to counteract lack of organization.
- As needed for patients with xerostomia:
  - Educate on proper oral hygiene (brushing, flossing) and nutrition.
  - Recommend brushing teeth with a fluoride containing dentifrice before bedtime. After brushing, apply neutral 1.1% fluoride gel (e.g., Prevident 5000 gel) in trays or by brush for 2 minutes. Instruct patient to spit out excess gel and NOT to rinse with water, eat or drink before going to bed.
  - Recommend xylitol mints, lozenges, and/or gum to stimulate saliva production and caries resistance.

Additional information: Special Needs Fact Sheets for Providers and Caregivers

Below are references and resources which although some are labeled for children, are very helpful for reviewing implications in adults.

References

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- Bimstein, E., Wilson, J., Guelmann, M., Primosch, R. (2008) Oral characteristics of children with attention-deficit hyperactivity disorder. Special Care Dentistry, 28(3): 107–110.
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- Clinical practice guideline: diagnosis and evaluation of the child with attention-deficit/hyperactivity disorder. American Academy of Pediatrics. Pediatrics 2000; 105 (5):1158–1170.
- NIH Institute for Attention Deficit Hyperactivity Disorder

Additional Resources

- NIH Institute for Attention Deficit Hyperactivity Disorder
- ASTDD-Special Needs
- Block Oral Disease, MA
- Free of charge CDE course: NIDCR CDE (2 CDE hours)

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