Attention Deficit Hyperactivity Disorder—State of the Art

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What is ADHD?

• Three subtypes:
  – Inattentive (under-diagnosed, esp. in girls)
  – Hyperactive-Impulsive
  – Combined

• Impairments must exist in more than one setting

• Must start before age 12

• Features often persist into adulthood
What is ADHD?

• Inattentive Symptoms
  – Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or with other activities.
  – Often has trouble holding attention on tasks or play activities.
  – Often does not seem to listen when spoken to directly.
  – Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (e.g., loses focus, side-tracked).
What is ADHD?

• Inattentive Symptoms
  – Often has trouble organizing tasks and activities.
  – 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 loses things necessary for tasks and activities (e.g. school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones).
  – Is often easily distracted
  – Is often forgetful in daily activities.
What is ADHD?

• Inattentive Symptoms
  – Six or more symptoms of inattention for children up to age 16, or five or more for adolescents 17 and older and adults; symptoms of inattention have been present for at least 6 months, and they are inappropriate for developmental level
What is ADHD?

• Hyperactive Symptoms
  – Often fidgets with or taps hands or feet, or squirms in seat.
  – Often leaves seat in situations when remaining seated is expected.
  – Often runs about or climbs in situations where it is not appropriate (adolescents or adults may be limited to feeling restless).
  – Often unable to play or take part in leisure activities quietly.
  – Is often "on the go" acting as if "driven by a motor".
What is ADHD?

• Hyperactive Symptoms
  – Often talks excessively.
  – Often blurts out an answer before a question has been completed.
  – Often has trouble waiting his/her turn.
  – Often interrupts or intrudes on others (e.g., butts into conversations or games)
What is ADHD?

• Hyperactive Symptoms
  – Six or more symptoms of hyperactivity-impulsivity for children up to age 16, or five or more for adolescents 17 and older and adults; symptoms of hyperactivity-impulsivity have been present for at least 6 months to an extent that is disruptive and inappropriate for the person’s developmental level.
What is ADHD?

• In addition, the following conditions must be met:
  – Several inattentive or hyperactive-impulsive symptoms were present before age 12 years.
  – Several symptoms are present in two or more setting, (e.g., at home, school or work; with friends or relatives; in other activities).
  – There is clear evidence that the symptoms interfere with, or reduce the quality of, social, school, or work functioning.
  – The symptoms do not happen only during the course of schizophrenia or another psychotic disorder. The symptoms are not better explained by another mental disorder (e.g. Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).
What is ADHD?

• Problems with diagnosis
  – Bipolar symptoms that mimic ADHD
    • Speech
    • Impulsivity
    • Distractibility
  – Bipolar symptoms that are NOT in common
    • Sustained mood shifts
    • Psychosis
    • Severe sleep disturbances
What is ADHD?

• Problems with Diagnosis?
  – Depression symptoms that mimic ADHD
    • Inattention/Concentration
    • Forgetfulness
  – Depression symptoms that are NOT in common
    • Discrete period of symptoms (ADHD is life-long)
    • Sudden worsening rather than gradual onset
What is ADHD?

• Problems with diagnosis
  – Other possibilities:
    • Substance abuse
    • Anxiety disorders
      – Physical/Sexual abuse
    • Over-reporting of parents/teachers
      – Get as many reporters as you can!
    • Early psychotic disorders
    • Personality disorder
    • Disruptive Mood Dysregulation Disorder
Who has ADHD?

• Common: 3-5 % of kids
  – More common (4-9 times) in boys than girls
    • Inattentive subtype may me more common in girls
  – May have genetic link

• May be co-morbid with:
  – Oppositional Defiant and Conduct Disorder
  – Tourette’s Disorder
  – Mood disorders
  – Substance abuse
Who has ADHD?

• Predisposing factors
  – Abuse
  – Low birth weight
  – Toxins (Lead)
  – Mental retardation
  – Intra-uterine drug exposure
Why Treat ADHD?

• Untreated ADHD leads to:
  – Low self-esteem
  – Smaller brain size
  – Diminished school performance
  – Under-developed social skills
  – Drug and alcohol use/abuse
  – Poor adult vocational skills
  – Poor relationship/parenting skills
ADHD -- Treatment

• Stimulants/Analeptics
  – Ritalin (Methylphenidate)
    • Concerta, Metadate
  – Focalin (Dexmethylphenidate)
  – Dexedrine (Dextroamphetamine)
    • Vyvanse
  – Adderall (Dextroamphetamine and racemics)
ADHD -- Treatment

• Dosing of Stimulants
  – Start low, but increase quickly to maximal efficacy tolerated
  – Vyvance—prodrug—lower abuse potential
    • Converted to active drug on the red blood cell
    • 70 mg = 30 mg Adderall XR, 30 mg = 10 mg Adderall XR
  – Adderall XR, Focalin XR, Ritalin LA – 50% immediate release / 50% long acting
  – Concerta – 1/3 immediate release, 1/3 released in 4 hours, 1/3 released in 7-8 hours—OROS device—only 3 stage
  – Metadate CD – 1/3 immediate release, 2/3 sustained release—gentlest / weakest delivery
ADHD -- Treatment

• Side effects of stimulants
  – Weight loss
  – Insomnia
  – Irritability, mood lability
ADHD -- Treatment

• Managing side effects of stimulants
  – Decrease dose
  – Alter dosing strategy
  – Change to another stimulant
  – Change to alternative agent
  – Supplement
ADHD -- Treatment

• Alpha 2 agonists
  – Catapres (Clonidine)
    • Capvay
  – Tenex (Guanfacine)
    • Intuniv

• Side effects of Alpha 2 agonists
  – Sedation (Clonidine more so than Tenex)
  – Little evidence for serious cardio side effects
ADHD -- Treatment

• Tricyclic antidepressants
  – Imipramine probably most used (avoid Desipramine in Children)
  – Help with sleep as well as ADHD
  – Adjunctive or single agents

• Side effects of Tricyclics
  – Cholenergic
    • Can help with enuresis
  – QTc prolongation (greater than 450, consider stopping)
ADHD -- Treatment

• Strattera
  – Norepinephrine reuptake inhibitor
  – Developed as an anti-depressant
  – Works much like Tricyclics
  – Fewer side effects
    • Upset stomach
      – Give with evening meal
    • No weight or sleep effects
ADHD -- Treatment

• Other agents
  – Wellbutrin
    • Can give concomitantly with stimulants!
    • Especially in depressed ADHD kids
    • Watch for increasing irritability
  – SSRIs, Effexor
    • Unclear efficacy
  – Neuroleptics
    • Used to manage behavior (ODD) NOT ADHD
ADHD -- Therapy

• Talk or play therapy
  – Helps with co-morbid disorders
    • Depression/low-self esteem
    • Conduct/Oppositional defiant disorder
  – Helps parents cope with behavior
  – Is not sufficient a treatment on its own
ADHD -- Treatment

• Parent/Caregiver Aids
  – Make sure person has full attention before giving instruction or direction
    • Eye contact
  – Ask person to repeat back
  – Use simple directions
    • Work up to multi-step commands
    • Cue cards/charts/lists
  – ADHD is not an excuse for bad behavior
    • But can be an underlying cause of frustration