UNC-CH School of Social Work

Clinical Lecture Series

ADHD: Differential Diagnosis and Treatment Strategies Across the Life Course

February 22, 2010

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Outline

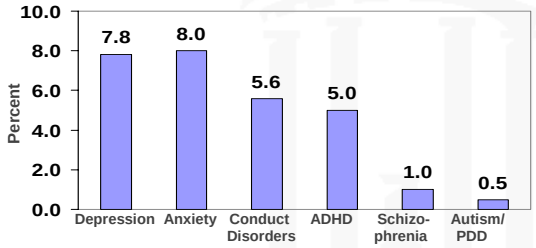
- Defining ADHD
- Epidemiology and Course
- Comorbidites
- Etiology
- Diagnostic assessment
- Treatment options

Mental Disorders With Possible Onset in Childhood

- Schizophrenia
- Disruptive behavior disorders, including ADHD
- Mood disorders, including bipolar disorder (BD)
- Autism and other developmental disorders
- Tic and related disorders
- Anxiety disorders
- Eating disorders

Treatment of children with mental disorders. Available at: www.nimh.nih.gov/publicat/childqa.cfm. Accessed 4/02.

Extent of Mental Disorders in US Children/Adolescents



ADHD = attention deficit/hyperactivity disorder;
PDD = Pervasive developmental disorders

Sources: Office of the Surgeon General, and NIHM (1999).

DSM-IV Criteria for ADHD

A) For at least six months, often exhibited 6 or more symptoms of inattention:

- fails to give close attention, makes careless mistakes
- difficulty sustaining attention
- does not seem to listen when spoken to directly
- fails to follow thru on instructions, finish schoolwork or chores
- difficulty organizing tasks and activities
- avoids/dislikes tasks requiring sustained mental effort
- loses things necessary for activities (i.e. toys, assignments)
- easily distracted
- forgetful in daily activities

DSM-IV Criteria for ADHD Continued:

B) For at least six months, often exhibited 6 or more symptoms of hyperactivity/impulsivity:

- fidgets with hands or feet or squirms in seat
- leaves seat in classroom or other situations where it is inappropriate
- runs about or climbs excessively
- difficulty playing quietly
- "is on the go" or acts as if "driven by a motor"
- talks excessively
- blurts out answers before questions have been completed
- difficulty awaiting turn
- interrupts or intrudes on others (e.g. butts into

DSM-IV-TR Criteria for ADHD

- At least 6 symptoms of inattention or at least 6 symptoms of impulsivity-hyperactivity
- Symptoms present at least 6 months, maladaptive, inconsistent with developmental level
- Some symptoms causing impairment present before age 7 years
- Some impairment from symptoms in at least 2 settings
- Not better accounted for by another mental disorder

Methods: Prevalence of ADHD Medication Treatment Based on Data from JCADHD Study

- 7339 children from 17 schools (grades 1-5) in semi-rural NC county were screened over two years
- 6101 parents (83 % response rate) provided medication data
- Exclusions: self-contained classes- autism, mental handicap
- Consent: parents were asked, "Has your child ever been diagnosed with ADHD by a doctor or psychologist?"
- If yes, "are they currently taking medication to treat ADHD?"

Prevalence of ADHD based on data from JCADHD Study

- 608/6101 (10 %) children were previously diagnosed with ADHD by a doctor or psychologist
- 434/6099 (7.1 %) were currently taking medication to treat ADHD
- 402/434 (93%) of children taking ADHD medication were taking stimulants

ADHD – CORE SYMPTOMS OVER TIME

PRESCHOOL

- Temper tantrums
- Argumentative beh.
- Aggressive behavior
- Fearless behavior
- Noncompliance
- Sleep disturbance

ELEMENTARY SCHOOL AGED

- Classic ADHD (per DSM-IV)

ADHD - Core Symptoms (Continued)

ADOLESCENTS

- Internal sense of restlessness rather than gross motor activity
- Poorly organized approaches to work
- Poor follow through on tasks
- Continuation of risky behaviors

ADHD Course Adolescence

60%-85% of children with ADHD meet ADHD criteria in adolescence

Less gross hyperactivity with development

ADHD Course Adulthood

Hard to measure because of criteria, informant, comorbidity, instruments

19-44 yr olds -4.4% (2%-8%)

40% continue to meet criteria at 18-20 years old;

90% have at least 5 symptoms and a GAF score of less than 60

ADHD & GIRLS

- Often present without hyperactivity
- Predominately inattentive is more prevalent in girls
- Have fewer conduct problems
- More likely to exhibit depression and anxiety

ADHD Course

At risk for:

Academic under achievement

Injuries

accidents

substance abuse

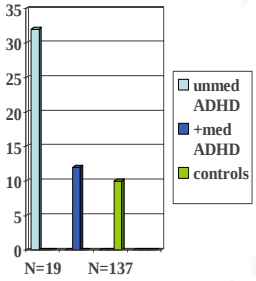
teen pregnancies

births out of wedlock

marriage and employment problems

antisocial and criminal behavior

Med. Reduces Substance Abuse (SA) in Adults with ADHD



- Incidence of SA
- unmedicated ADHD patients at higher risk for SA
- no sig diff. between medicated ADHD& controls

Biederman, Pediatrics.1999;104:e20-e25

ADHD & Smoking

- ADHD is a significant predictor or early smoking in adolescence
- *Milberger et al. JAACAP 1997:36:37-44*
- N=237 boys aged 6-17, followed for 4yr
- At end of 4 year, 19% of ADHD boys were smoking compared with 10% of controls

Etiology of ADHD

- Deficits in Executive Function:
- Response inhibition
- Vigilance
- Working memory
- Planning

Comorbidities and ADHD

- **54 – 84% of children and adolescents with ADHD meet criteria for oppositional defiant disorder**
- **Significant portion go on to conduct disorder**
- **15 –20% start smoking or develop SA disorder**
- **25 – 35% have learning or language problems**
- **Up to 1/3 have anxiety disorders**
- **Controversy about prevalence of mood disorders in patients with ADHD**

Etiology of ADHD-Genetics

- 76% Heritability
- Markers add chromosome 4,5,6,8,11,16, and 17
- Genes-dopamine and serotonin
- D4 Receptor gene,7 repeat variant - associated with better outcomes, less persistent ADHD symptomatology, higher IQs

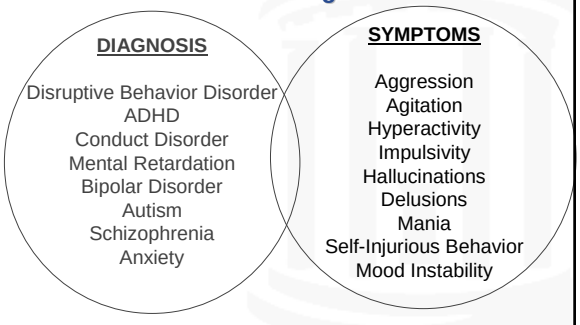
ADHD Brain Changes

- Reduced cortical white and grey matter volume
- Functional imaging-differences in brain activation in caudate, frontal lobes and anterior cingulate

Non Genetic Causes of ADHD

- Perinatal stress and low birth weight
- Traumatic brain injury
- Maternal smoking
- Severe early deprivation/maltreatment
- Alcohol

Common Symptoms Observed Across Different Diagnoses



Differential Diagnosis

- **Anxiety Disorders**
- **Mood Disorders**
- **Psychotic Disorders**
- **Learning Disabilities**
- **Developmental Disorders**
- **Substance Use Disorders**
- **Medical Illnesses**
- **Sleep disorder**
- **Sensory Impairments**
- **Speech and Language Disorders**

Physical Causes of Poor Attention

- Impaired vision or hearing
- Seizures
- Sequelae of head trauma
- Acute or chronic medical illness
- Poor nutrition
- Insufficient sleep
- Side effects of medication

Assessment

- Child, parent and family interview
- Developmental, medical, social, past psychiatric, &family psychiatric histories
- Rule out medical causes
- Rule out/in comorbid diagnoses
- Obtain collateral information from school, others
- Consider Psy, OT, Sp and Lang Evals

Assessment

- Always screen for signs and symptoms
- Multiple informants
- If positive ask about ADHD symptoms- age of onset, duration, severity, frequency
- Chronic course?
- Present in 2 or more settings?
- Comorbid problems?
- Family history
- Individual interview

Physical Evaluation

- Physical exam (vital signs, wt., ht.)
- Neurological exam
- Vision and hearing
- Lab Work if indicated (Pb, CBC, TSH, etc)

Assessment (continued)

- Parents are often more reliable with regard to report of *externalizing* symptoms
- Children are more reliable with regard to report of *internalizing* symptoms
- Teachers are generally very helpful

Common Behavioral Rating Scales

- ADHD Rating Scale
- Brown ADD Rating Scale for Children Adolescents and Adults
- Child behavior checklist
- Connors (adult and child)
- SNAP-4 and SKAMP
- Vanderbilt

Treatment of ADHD

- Education of parents and child
- School interventions
- Medication
- Ancillary treatments
- Psychosocial interventions
- Dietary treatment
- Other Treatments

ADHD - PSYCHOSOCIAL RX.

- Parent behavior modification training
- Parent support group
- Family psychotherapy
- Social skills group
- Individual therapy
- Summer day camp
- Coaching

Treatment Modalities for ADHD MEDICATIONS:

- STIMULANTS
- ATOMOXETINE
- CLONIDINE & GUANFACINE
- TRICYCLIC ANTIDEPRESSANTS
- BUPROPRION
- VENLAFAXINE
- DOPAMINE ANTAGONISTS- antipsychotics (poor results)

ETHICAL ISSUES

- Risks of medication
- Risks of untreated disorder
- Expected benefits of meds. relative to other treatments
- Off-label use
- Parental use of meds to control or eliminate troublesome behavior instead of investigating the environmental role
- Risk of labeling a child (military/insurance)

Stimulants are first line medication for ADHD

- In use since 1930's
- Most side effects are mild and easily reversed
- 70% of children with ADHD respond to first stimulant trial
- 90% respond by second trial

To Schedule Child and Adolescent Patients

- Call 919-966-5217
- Generally takes 4-8 weeks for an appointment after intake packet is returned
- Seen for consultation with recommendations, sent back to treating professional/physician
- Ongoing treatment quite limited