

# COGNITIVE DISORDERS

Presented by Linda Gadoury PCNS

---

---

---

---

---

---

---

---

## Cognitive Disorders

- Lecture Overview
  - Autistic Spectrum Disorder
  - Mental Retardation
  - Rett's Disorder
  - Dementia
  - Childhood Psychosis
  - ADHD
  - Tourette's Disorder

---

---

---

---

---

---

---

---

## Cognitive Disorders

- Occur throughout the lifespan
- Interfere with learning and the processing and assimilating of knowledge, and memory

---

---

---

---

---

---

---

---

## Developmental Disorders (PDD)

- Definition:
- Characterized by severe and pervasive impairment in reciprocal social interaction and communication skills
- Usually accompanied by stereotypical behavior, interests, and activities (p.640)

---

---

---

---

---

---

---

---

## Autistic Spectrum Disorder

- Neurological disorder
- Interferes with normal brain development
- Affects sensory input processing
- Deficits in:
  - Learning
  - Reasoning
  - Communication
  - Social relationships

---

---

---

---

---

---

---

---

## Autism cont.

- Cause unknown
- Believed to be a disturbance in the central nervous system
- 4 times more prevalent in boys
- Affects 15 in every 10,000 children

---

---

---

---

---

---

---

---

## Autism defined cont.

- Spectrum disorder—differs in degree and severity along a continuum
- Left hemisphere dysfunction—
  - language, reasoning, logic
  - savant syndrome

---

---

---

---

---

---

---

---

## Theories

- Abnormality in brain function--- hemispheric specialization, arousal and neurotransmitters--- dopamine and serotonin both elevated
- Genetic link
- Opiate excess theory
- Viral and immune theories

---

---

---

---

---

---

---

---

## Autism Assessment

- Four Major Areas
  - Language Development
  - Intellectual Development
  - Interpersonal Relationships
  - Motor Skills

---

---

---

---

---

---

---

---

## Autism Assessment cont.

- Language Development
  - Autism present from birth but usually diagnosed 18 to 24 months
  - Failure to develop language is a hallmark defining characteristic of autism

---

---

---

---

---

---

---

---

## Language cont

- Many parents present with complaint that they believe their child is deaf (motor behavior of covering their ears)
- Normal toddler by 18 months has vocabulary of at least 10 words, by 24 months 300 words and can comprehend speech

---

---

---

---

---

---

---

---

## Language cont.

- Delayed or absent
- Echolalia
- Unusual vocalizations
- Pronoun reversal—I and You
- Inability to name objects
- Symbolic meanings
- Monotonous or singsong speech

---

---

---

---

---

---

---

---

## Language cont

- Language is such a clear defining characteristic that it is also a prognostic indicator
- Failure to develop language by age 5 often hails a poor prognosis

---

---

---

---

---

---

---

---

## Communication assessment

- Severe language disturbance creates serious communication problems
- Many theorists believe the abnormal behavioral traits are primitive means of communication for the child with autism

---

---

---

---

---

---

---

---

## Communication cont

- Signing is controversial
- Child with Autism frequently points or tugs on caregiver to get needs met
- Child easily frustrated in great part related to inability to communicate

---

---

---

---

---

---

---

---

## Intellectual Development

- Intellectual functioning difficult to measure
- Standard IQ Tests inadequate
- Many mentally retarded due to learning difficulties
- Severity of language & communication impairment makes learning very difficult
- Attending skills
- Savant Syndrome (idiot savant)

---

---

---

---

---

---

---

---

## Interpersonal Assessment

- Numerous disturbances in mood and emotions
- An initial complaint of parents is a lack of emotions, failure to bond, not wanting to be held, "appears to be in own world", autistic aloneness

---

---

---

---

---

---

---

---

## Interpersonal cont

- Play is the work of children
- Child preoccupied with objects
- Doesn't engage in play with other children
- Prefers to be alone
- Temper tantrums
- Family problems

---

---

---

---

---

---

---

---

## Motor Disturbances

- Poor coordination
- Tiptoe walking
- Peculiar hand movements—flapping and clapping
- Stereotyped body movements
- Prone to injury

---

---

---

---

---

---

---

---

## Nursing Diagnosis (NANDA)

- Impaired verbal communication
- Social isolation
- Risk for injury

---

---

---

---

---

---

---

---

## Treatment and Interventions

- Special education
- Behavior therapy
- Early intervention
- Medication
  - Major Tranquilizers interfere with the growth hormone—on 3 months, off one

---

---

---

---

---

---

---

---

## Treatment cont.

- Medication cont.
  - Naltrexone
    - decreases opiates in the brain
    - decreases self-injurious behavior
    - no effect on language skills
- Most children with autism will need some form of care throughout their lives

---

---

---

---

---

---

---

---

## The Hospitalized Child with Autism

- Thorough assessment of child's routines vital necessity
- Involve parents
- Decrease stimulation
- Clear, concise communication
- Limit procedures
- Limited restraint

---

---

---

---

---

---

---

---

## Hospitalized cont

- Provide parents with respite
- Allow self-stimulating behavior when possible
- Introduce new situations slowly  
Limit unnecessary procedures
- Use a consistent approach

---

---

---

---

---

---

---

---

## Asperger's Disorder

- Resembles Autism
- Usually recognized later in childhood because language and communication development is normal
- Severe disturbance in social interactions

---

---

---

---

---

---

---

---

## Asperger's Disorder cont

- Development of restrictive, repetitive behavior patterns
- Delayed motor milestones
- Prognosis more favorable than that of autism but social problems often persist into adulthood

---

---

---

---

---

---

---

---

## Childhood Disintegrative Disorder

- Usually manifests around age 2 after a period of normal development
- Bizarre behavior, symbolic communication, marked regression, possible hallucinations and delusions
- Stereotypical behaviors similar to autism
- Treatment similar to that of autism with a slightly more favorable prognosis because there has been a period of normal development

---

---

---

---

---

---

---

---

## Rett's Disorder

- Observed only in females
- Development of severe neurological deficits after period of normal pre and post natal development
- Head circumference normal at birth but growth rate slows between 5 and 48 months

---

---

---

---

---

---

---

---

## Rett's Disorder cont

- Progressive loss of previously acquired motor skills
- Stereotypical hand movements
- Severe psychomotor retardation
- Severe language problems
- Limited social interaction

---

---

---

---

---

---

---

---

## Mental Retardation

- Many causes
- Exists on a continuum
- Many treatment options
- Differs greatly from autism and childhood psychosis

---

---

---

---

---

---

---

---

## ADHD

- No exact known cause
- Brain imaging shows changes in striatal region of the brain—reduced blood flow
- Ritalin shown to increase blood flow to this area
- Excessive gross motor activity is a defining characteristic

---

---

---

---

---

---

---

---

## ADHD

- Inattention continues in multiple areas of learning
- Child develops low self-esteem
- May in severe cases also present with enuresis and/or encopresis

---

---

---

---

---

---

---

---

## Drug Interventions ADHD

- methylphenidate HCL (Ritalin)
  - Major side effects
    - weight loss
    - delayed growth
  - Ritalin LA—long acting
    - can be given once daily
    - Most need twice daily dosing
    - Often needed to be given by school nurse

---

---

---

---

---

---

---

---

## Drug interventions ADHD cont.

- Atomoxetine HCL (Strattera)
  - Similar to Ritalin
    - advantage is once daily dosing
    - can be given in divided doses.
  - Black Box Warning: Some studies have shown children on this drug have increased risk of suicide
  - Must monitor weight and growth similar to Ritalin.

---

---

---

---

---

---

---

---

## Dementias

- Dementia of Alzheimer's Type (DAT)
  - Approx. 2/3 of all dementias in elderly caused by Alzheimer's disease
- Vascular dementia
- Parkinson's disease
- Pick's disease
- Diffuse Lewy-Body disease
- Substance-induced persisting
- Due to multiple causes

---

---

---

---

---

---

---

---

## Dementia Prevalence

- 1900—3 million (4%) of US pop. > 65
- Now 1 in 9 Americans is over 65
- 4-5 million (16%-18%) have neurodegenerative disorders
- 50% in NHs
- Est. by 2030 number over 65 will increase to 1 in 5, or 65 million
- Projected dementia > 10 million
- (S. Branski, RN, MSN, CS)

---

---

---

---

---

---

---

---

## Alzheimer's Disease (DAT)

- Chronic, progressive, degenerative disease
- Characterized by progressive deterioration in cognitive functioning
- Exists on a continuum from mild to severe—4 stages (p. 588)

---

---

---

---

---

---

---

---

## DAT continued

- Exact etiology unknown
- Several theories & risk factors proposed
- Risk factors—age, family HX, Down's syndrome, H/O head trauma, presence of E4 variant of apolipoprotein E (APOE) on chromosome 19
- Late onset positively correlated w/occurrence of E4

---

---

---

---

---

---

---

---

## DAT continued

- Structural Changes in the Brain seen in normal aging
- Greatly accelerated in DAT
  - Reduction in brain weight
  - Widening of cerebral sulci and fissures
  - Enlargement of cerebral ventricles
  - Narrowing of the gyri

---

---

---

---

---

---

---

---

## DAT continued

- Microscopic changes
  - Neurofibrillary tangles
  - Senile plaques
  - Granulovascular degeneration

---

---

---

---

---

---

---

---

## DAT continued

- Chemical Changes in the Brain
  - Cholinergic Hypothesis
    - Acetylcholine (Ach) reduced as much as 75%
      - Leads to dec. acetyltransferase in hippocampus
      - Dec. interferes w/cholinergic innervation to cerebral cortex
      - Results in problems w/cognition & memory
      - In addition to cholinergic transmission, NE, 5HT, and DA systems which innervate hippocampal & cortical areas are also severely affected

---

---

---

---

---

---

---

---

## Alzheimer's Assessment cont

- Defensive Behaviors
  - Denial
  - Confabulation
  - Perseveration
  - Avoidance of questions

---

---

---

---

---

---

---

---

## Alzheimer's Disease cont.

- Four defining characteristics—  
(p.457)
  - Aphasia
  - Apraxia
  - Memory Impairment
  - Disturbances in Executive Functioning

---

---

---

---

---

---

---

---

## Alzheimer's Assessment Cont.

- More than 30% will present with
  - Depression
  - Hallucinations and delusions
  - Aggressive and irritable behavior
  - Paranoia
  - Wandering and insomnia

---

---

---

---

---

---

---

---

## Alzheimer's Interventions (NIC)

- Tertiary level of prevention
  - Safety
  - Maintenance of optimal level of functioning
  - Simple Structured environment
  - Clear Communication—multiple channels
  - Family support

---

---

---

---

---

---

---

---

## Alzheimer's Medications

- Tacrine (Cognex, THA)
- Donepezil (Aricept)
- Vitamin E
- Ibuprofen
- Estrogen
- Antipsychotics

---

---

---

---

---

---

---

---

## Pick's Disease

- Rare progressive degenerative disorder (1%-5% of dementias)
- Onset after 40; less common after 60
- Similar to Alzheimer's

---

---

---

---

---

---

---

---

## Pick's disease cont.

- Affects frontal & temporal lobes first
- Decreased ability to initiate, organize and follow through
- Earliest signs:
  - Personality changes
  - Decline in functioning @ home or work
  - Frequently 1<sup>st</sup> Dx'd as stress or depression
  - Later Dx'd Alzheimer's

---

---

---

---

---

---

---

---

## Tourette's Disorder

- Neurological disease marked by motor and verbal tics
  - Causes marked distress in social and occupational functioning
  - May appear as early as age two, but most commonly around age seven

---

---

---

---

---

---

---

---

## Tourette's Assessment

- Motor Tics
  - Usually involve head
  - Eye blinking usually first symptom
  - Change in location, frequency and severity over time

---

---

---

---

---

---

---

---

## Tourette's Assessment Cont.

- Verbal Tics
  - Words and Sounds
  - Coprolalia (uttering obscenities)

---

---

---

---

---

---

---

---

## Tourette's Assessment Cont.

- Obsessions and Compulsions
- Hyperactivity
- Distractibility
- Impulsivity
- Low self-esteem

---

---

---

---

---

---

---

---

## Tourette's Interventions

- Drug Therapy
- Psychotherapy
- Behavior Therapy
- Family Support

---

---

---

---

---

---

---

---