

Chapter 15 – Cognitive Disorders

Delirium Clinical Description

- Described >2500 years ago
- Characterized by impaired consciousness & cognition during the course of several hours or days
 - Appear confused, disoriented & out of touch with their surroundings
 - Can't focus & sustain attention on even the simplest tasks
 - Marked impairments in memory & language

- Symptoms come on suddenly, over the course of a few hours or days
- Can subside relatively quickly, with full recovery expected in most cases within several weeks
- A minority continue to have intermittent problems; some lapse into a coma and die

Delirium: Statistics

- Incidence & Prevalence

Causes

- Medical conditions
 - Infections
 - Head injury/ brain trauma/ brain tumor
- Substance-induced
 - Intoxication by drugs & poisons
 - Improper use of medication problematic for elderly
 - Withdrawal from alcohol & sedative, hypnotic & anxiolytic drugs
- Other
 - Sleep deprivation, immobility, & excessive stress

Delirium: Treatment Biological Interventions

- Benzodiazepines for delirium brought on by withdrawal
- Necessary medical treatments for the underlying problem
- Haldol

Psychosocial Interventions

- Goal is to reassure the person to help him/her deal with the agitation, anxiety & hallucinations
- Prevention

Dementia: Clinical Description

- Gradual deterioration of brain functioning that affects judgment, memory, language, & other advanced cognitive processes
- Some forms of the disorder are at present irreversible
- Has a gradual progression, unlike delirium
- Causes
 - Insults to brain, e.g., stroke
 - Infectious diseases of syphilis & HIV
 - Severe head injury
 - Introduction of certain toxic or poisonous substances
 - Diseases such as Parkinson's, Huntington's, & Alzheimer's disease

- Memory impairment initially experienced as an inability to register ongoing events/STM, e.g., what happened in the past hour
- Subsequent symptoms
 - Impairment in *visuospatial skills*
 - *Agnosia*
 - *Facial agnosia*
 - Impaired *memory, planning, & abstract reasoning* produce general deterioration of intellectual functioning

- Emotional changes
 - Common side effect include delusions, depression, agitation, aggression, & apathy
- Cognitive functioning continues to deteriorate until the person requires almost total support to carry out day-to-day activities
- Death occurs as a result of inactivity + other illnesses, e.g., pneumonia

Statistics

- Incidence
- Gender differences
- Age factors
- Financial costs

Dementia of the Alzheimer's Type: Clinical Description

- First described in 1906 by German psychiatrist Alois Alzheimer
- Predominant Symptoms
 - Memory impairment
 - Impaired orientation, judgment, & reasoning
- Problems
 - Inability to integrate new info results in failure to learn new associations
 - Forget important events & lose objects
 - Interest in nonroutine activities narrows
 - Lose interest in others & become more socially isolated

- As the disorder progresses, they can become agitated, confused, depressed, anxious or even combative
- *Sundowner syndrome*
- Other cognitive disturbances
 - aphasia
 - apraxia
 - agnosia
 - disturbance in executive functioning
- The cognitive deficits cause significant impairment & represent a decline from prior functioning
- Cognitive deterioration is slow during the early & later stages, but more rapid during the middle stages
- Average survival time is 8 years
- Definitive diagnosis can be made only upon autopsy

- Nun study
- Intellectual achievement seems to delay the symptoms
- Cerebral reserve hypothesis

Statistics

- Usually appears during the 60s or 70s
- Presenile dementia
- 50% of cases of dementia are ultimately found to be the result of Alzheimer's disease
- Gender differences
- Racial differences

Vascular Dementia Clinical Description

- Dementia that develops as a result of blockage or damage to blood vessels in the brain, making it impossible for them to carry oxygen & other nutrients to certain areas of brain tissue
 - A long-term consequence of stroke
- Because multiple sites in the brain can be damaged, the profile of degeneration differs from person to person

- The memory & cognitive disturbances generally are similar to that found in Alzheimer's disease
- There also may be certain focal neurological signs such as abnormalities in walking & weakness in the limbs
- Onset typically is more sudden than for Alzheimer's
- Outcome is similar to that of Alzheimer's
- Statistics

Dementia due to other General Medical Conditions: Clinical Description

- Dementia due to HIV disease
- Dementia due to head trauma
- Dementia due to Parkinson's disease
- Dementia due to Huntington's disease
- Dementia due to Pick's disease
- Dementia due to Creutzfeldt-Jakob disease
- Dementia due to hydrocephalus, hypothyroidism, brain tumor, vitamin B12 deficiency

- Subcortical dementia
 - Dementia due to HIV, Parkinson's, and Huntington's disease
 - It affects primarily the inner areas of the brain, below the outer layer called the cortex
 - Do not exhibit *aphasia*
 - More likely to exhibit severe depression and anxiety
 - More likely to exhibit early impairment in motor skills including speed & coordination

- Dementia due to HIV disease
 - Due to HIV infection itself
 - Early symptoms:
 - Cognitive slowness
 - Impaired attention
 - Forgetfulness
 - Other symptoms:
 - Clumsiness
 - Repetitive movements such as tremors & leg weakness
 - Apathetic & socially withdrawn
 - Statistics

- Dementia due to head trauma
 - Caused by accidents
 - Can lead to cognitive impairment in both children & adults
 - The most common symptom is memory loss

- Dementia due to Parkinson's disease
 - Degenerative brain disorder
 - Affects 1 out of every 1,000 people worldwide
 - Motor problems are characteristic because of damage to dopamine pathways
 - Stooped posture
 - Slow body movements
 - Tremors
 - Jerkiness in walking
 - Voice is affected as well, causing very soft monotone
 - Dementia (subcortical) occurs at a rate twice that found in the general population

- Dementia due to Huntington's disease
 - Genetic disorder that initially affects motor movements, generally in the form of chorea, involuntary limb movements
 - Autosomal dominant disorder
 - Can live for 20 years after the 1st signs of the disease
 - Somewhere between 20 & 80% go on to display (subcortical) dementia
- Dementia due to Pick's disease
 - Very rare neurological condition
 - The cause is unknown
 - Produces a cortical dementia similar to that of Alzheimer's disease
 - Like Huntington's disease, it occurs relatively early in life – during the 40's or 50's: a presenile dementia

- Dementia due to Creutzfeldt-Jakob disease
 - Extremely rare, affecting only 1 in a million
 - Recent finding of a variant that may be linked to bovine spongiform encephalopathy (BSE), *mad cow disease*
- Substance-Induced Persisting Dementia
 - Prolonged drug use can damage the brain
 - 7% of the individuals who are alcohol-dependent meet the criteria for dementia
 - Dementia also can be caused by sedative, hypnotic, & anxiolytic drugs, as well as by inhalants, e.g., glue or gasoline
 - Symptoms are identical to those of Alzheimer's disease

Dementia: Causes Biological Influences

- Cause of Alzheimer's disease remains a mystery
- Degeneration in Alzheimer's
 - *Neurofibrillary tangles*
 - Dead neurons cluster in *Neuritic plaques* aka *senile* or *amyloid plaques*
 - Brain atrophy
- Multiple genes seem to be involved
 - Genes on chromosomes 21, 19, 14, 1 & 12 all have been linked to certain forms of Alzheimer's
 - Deposits of amyloid proteins may cause the cell death associated with Alzheimer's

- Why does this protein accumulate in the brain cells of some people but not others?
 - Amyloid precursor protein (APP)
 - apolipoprotein E (apoE)
- How does amyloid protein cause brain cell death?

Psychological & Social Influences

- Head trauma — Dementia pugilistica
- Substance abuse
- Biological vulnerability to vascular disease
- Life-style issues such as diet, exercise, & stress

Cultural Factors

Dementia: Treatment Overview

- With extensive brain damage, no known treatment can restore lost abilities because neurons currently are irreplaceable
 - Therefore, the goals of treatment are:
 - Prevention of conditions that may bring on dementia
 - Try to stop the brain damage from spreading & becoming worse – (biological intervention)
 - Attempt to help these individuals & their caregivers cope with the advancing deterioration (psychosocial treatment)

Biological Treatments

- Dementia due to known infectious diseases, nutritional deficiencies, & depression can be treated if caught early
- No effective treatment at present for dementia due to stroke, HIV, Parkinson's, Huntington's, & Alzheimer's disease
- Glial cell-derived neurotrophic factor (GDNF) and transplanting fetal brain tissue
- Drugs that prevent damage inflicted by blood clots
- Drugs to enhance the cognitive abilities of people with Alzheimer's disease
 - Cognex & Aricept
- Other medical approaches to slow the course of Alzheimer's disease

Psychosocial Treatments

- Clinical depression in caregivers of people with dementia
- Focus on enhancing the lives of people with dementia & their families
- Teach them skills to compensate for their lost abilities
- Provide cues to help people safely navigate around their home
- Provide caregivers with assertiveness training & stress management
- Provide supportive counseling to caregivers

Prevention of Dementia

- Estrogen replacement therapy
- Judicious use of nonsteroidal anti-inflammatory medication
- Proper treatment of systolic hypertension
- Proper treatment & prevention of stroke

Amnesic Disorder

- Development of memory impairment as manifested by impairment in the ability to learn new information or the inability to recall previously learned information
- This memory impairment results in impaired functioning
- Unlike in dementia, this memory impairment occurs in the absence of other cognitive impairment
- Can be due to the physiological effects of a medical condition, e.g., head trauma, or the long-term effects of a drug

- One form is Wernicke-Korsakoff syndrome, which is caused by damage to the thalamus
 - Can be caused by a stroke or chronic heavy alcohol use or other insults to the brain
 - Researchers are trying to supplement thiamine (vitamin B-1) in cases of alcohol abuse