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

Why? 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

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

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
• 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 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

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

### Amnestic 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