



Psychiatry Team

431

Introduction to Neuropsychiatric Disorders

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- IMPORTANT
- NOTES
- EXTRA INFORMATION

Neuropsychiatric Disorder :

It is the medical science dealing with both organic and psychic disorder of the nervous system.

Cognitive disorders : (3 D's): Delirium, dementia, and depression

- Cognitive disorders are characterized by significant impairment in function such as memory, judgment, language, and attention. This impairment represents a change from base line.
- Cognitive disorders reflect disruption in one or more of the above domains, and are also frequently complicated by behavioral symptoms.
- Cognitive disorders represent the complex interface between neurology, medicine, and psychiatry.
- Organic mental disorders or organic brain disorders vs. functional disorders.
- Advances in molecular biology, diagnostic techniques, and medication management have significantly improved the ability to recognize and to treat cognitive disorders.

DELIRIUM

Impairment of consciousness

(short-term confusion and changes in cognition).

It is a syndrome with multiple causes.

Usually accompanied by global impairment of **cognitive functions**, associated with **emotional lability** (excessive emotional reactions and frequent mood changes), **hallucinations** (**false sensory experiences** that appear to be real perceptions. These sensory impressions are **generated by the mind rather than by any external stimuli**, and may be seen, heard, felt, and even smelled or tasted) or **illusions** (a mental impression derived from **misinterpretation of an actual experience**) and **inappropriate behavior**.

It is an **Acute Reversible and Transient** condition. (treated as a **medical emergency**)

Factors that precipitate **DELIRIUM**:

Drug use (hypnotics, anticholinergics)

- **E**lectrolyte and physiologic abnormalities
- **L**ack of drugs (withdrawal)
- **I**nfection
- **R**educed sensory input (blindness, deafness)
- **I**ntracranial problems (stroke)
- **U**rinary retention and fecal impaction
- **M**yocardial problems (MI, heart failure, arrhythmias) .

What is difference between hallucinations and illusions?

Hallucination → thinking about an object which has no real existence.
 Illusion → means getting wrong perception about an object which has a real existence.

E.g.:

Thinking about a ghost is hallucination whereas **thinking a rope as a snake in a dark night is illusion.**

Epidemiology :

- Common among hospitalized patients, about 10% of all hospitalized patients.
- **Very young and elderly** are more susceptible to delirium.
- Patients with history of delirium or brain injury are more likely to have an episode of delirium than the general population.
- **15% of delirious patients could die due to delirium itself**

Etiology :

- Major causes include systemic **disease, CNS disease, and either intoxication with or withdrawal from prescribed medications or drug of abuse.**
- Delirium is thought to involve **dysfunction of reticular formation and acetylcholine transmission.**

Acetylcholine is one of the critical neurotransmitters in the pathogenesis of delirium. A small prospective study among patients who have undergone elective hip replacement surgery showed reduced preoperative plasma cholinesterase activity in as many as one quarter of patients. In addition, reduced preoperative cholinesterase levels were significantly correlated with postoperative delirium.

Clinically, good reasons support this hypothesis. Anticholinergic medications are well-known cause of acute confusional states, and patients with impaired cholinergic transmission, such those with Alzheimer disease, are particularly susceptible. In patients with postoperative delirium, serum anticholinergic activity is increased.

- **All types of fever could lead to delirium.**
- **UTI patients are more common to develop delirium in old age.**
- Noradrenergic hyperactivity has been associated with **alcohol withdrawal delirium.**

Alcohol withdrawal delirium caused by cessation or reduction in alcohol consumption characterized by autonomic hyperactivity, such as tachycardia, sweating, and hypertension, a coarse, irregular tremor, delusions, vivid hallucinations, and wild agitated behavior.

Types of Delirium:

- Substance withdrawal delirium **e.g. alcohol**
- Substance intoxication delirium
- Delirium due to medical condition **e.g. Hypothyroidism, tumor and bronchial asthma.**

Diagnosis :

Disturbance of **consciousness**, change in cognition, or the development of perceptual disturbance, over a **short period of time and tend it fluctuate during the day.**

Management :

Laboratory Tests:

Delirium is a **medical emergency**, its cause must be identified as quick as possible.

Treatment:

Identify and **treat the underlying cause.**

Anti-psychotic, especially Haloperidol, used to treat delirium.

Dementia

characterized by severe multiple cognitive deficits including **MEMORY LOSS**. (recent memory not long term memory, that why patients mistaken to be a normal person).

Consciousness is **NOT impaired**. (Consciousness is used to differentiate between dementia and delirium, but in late stage there will be loss of conscious)

Major defects involve orientation, memory perception, intellectual functioning (*misjudgment due to atrophy of the brain*), and reasoning. (Patient may suffer from emotional disturbance (30% of them have depression) and disturbance in perception)

The defects represent a change from baseline and interfere with functioning. (*Cannot do normal tasks like showering, buttoning a dress or folding a paper*)

Marked changes in **personality**, affect, and may be associated with **behavioral problems**.

Dementias are commonly accompanied by hallucinations (*in perception*) (20 – 30%), and delusions (*in thought. For ex, cannot eat because they think it's a poisoned food*) (30 – 40 %)

Symptoms of depression and anxiety are present in 40 – 50% pts with dementia

This may be shown in their behavior. E.g. If they can't give a reason they get mad and start shouting

The normal process in producing a behavior is " **idea > feeling > behavior** " if there is any impairment in one of these steps that leads to a behavioral problem. E.g. we asked a Q and they cannot answer = they feel afraid = change in their behavior.

REMEMMBER: DEMENTIA is not a normal aging process character. It is a pathological disorder. However, the increasing of forgetting is a normal sign of aging.

Epidemiology

A syndrome of elderly, 5% of Americans over the age of 65 have severe dementia, and 15% have mild dementia.

Increasing age is the most important **risk factor**.

15% of dementia cases are **reversible**

The majority is not reversible, but we can't neglect the 15%

Etiology

Most common cause is
(1) **Alzheimer's disease (progressive):**
(50 – 60%)
(2) **vascular disease (sudden)**

Other common causes include head trauma, alcohol, movement disorders (such as Huntington's disease and parkinsonism) and HIV infection

Diagnosis

Dementia of the Alzheimer's type, which usually occurs in persons over 65 years of age and is manifested by **progressive** intellectual disorientation and dementia, delusions, or depression.

Vascular dementia, caused by vessel thrombosis or hemorrhage.

Other medical conditions, (e.g. human immunodeficiency virus HIV disease, head trauma, Pick's disease, head trauma, Pick's disease, Creutzfeldt-Jakob disease, which is caused by a slow-growing transmittable virus)

Substance induced, caused by toxin or medication (e.g. gasoline fumes, atropine)

Multiple etiologies

Not otherwise specified (if cause is unknown)

Clinically, they don't recognize the names and name the things by referenced name. ex, naming the pin by that or this.

Management

- Potentially **reversible causes** for the dementia (hypothyroidism, CNS syphilis, subdural hematoma, vita B12 deficiency, uremia, hypoxia)
- Identify other **treatable medical** conditions that may worsen the dementia
- Supportive measures to **the patient and care givers**
- Ensure proper treatment of any underlying medical problems or associated disruptive symptoms
- As functioning decreases, nursing home placement may be necessary
- Provide an environment with frequent cues for orientation to day, date, place, and time.
- Maintain proper nutrition, exercise, and daily activities

Course and Prognosis

Dementia may be :

- **progressive**
- **remitting.**
- **stable.**

- ✚ In reversible causes of dementia the course depends on how **quickly the cause is reversed.**
- ✚ For Dementia of Alzheimer's type the course is likely to be one of **slow deterioration.**

*How to differentiate between
Delirium & Dementia*

Dementia	Delirium
History of Chronic disease	History of Acute disease
Insidious onset	Rapid onset
Duration months/ years	Duration days /weeks
Progressive course, <u>majority irreversible</u>	Fluctuating course, often reversible
Level of consciousness Normal <u>early on</u>	Fluctuating level of consciousness
Normal level of arousal (can give reactions)	Agitation or stupor (no reaction)
Usually in nursing homes and psychiatric hospitals	In medical, surgical and neurological wards

Amnestic Disorder

Only memory
impairment

Impaired recent short term and long term memory attributed to a specific organic cause (drug or medical disease) patient is normal in other areas of cognition.

Diagnosis

The development of memory impairment as manifested by impairment in the ability to **recall previously learned information**

The memory impairment cause significant impairment in **social** or **occupational functioning**

The memory impairment **does not** occur during the course of a **delirium or dementia**

The disturbance is due to general medical condition or substance.

Etiology

Most common form is caused by thiamine deficiency associated with alcohol dependence. **(the alcohol prevent the thiamine to be absorbed)**

Typically any process that damages certain diencephalic structures (lympic system, hypothalamus, thalamus) and temporal structures (mamillary bodies, fornix, hippocampus) can cause the disorder.

Many also result from head trauma, tumor, surgery, hypoxia, infraction, seizures and herpes simplex encephalitis.

Management

Identify the cause and reverse it if possible, otherwise, institute supportive medical procedures. **(the patient cannot be transferred to psychiatry clinic because it is mainly a medical condition)**