

DELIRIUM:

Defined by the acute onset of fluctuating cognitive impairment and a disturbance of consciousness, Abnormalities of mood, perception, and behavior are common psychiatric symptoms; tremor, asterixis, nystagmus, incoordination, and urinary incontinence are common neurological symptoms. Classically, delirium has a sudden onset (hours or days), a brief and fluctuating course, and rapid improvement when the causative factor is identified and eliminated, but each of these characteristic features can vary in individual patients.

There are four subcategories based on several causes: (1) general medical condition (e.g., infection); (2) substance induced (e.g., cocaine, opioids, phencyclidine [PCP]); (3) multiple causes (e.g., head trauma and kidney disease); and (4) delirium not otherwise specified (e.g., sleep deprivation).

Epidemiology: Delirium is a common disorder, accounts for:

- Approximately 10 to 30 percent of hospitalized patients.
- Approximately 30 percent of patients in surgical intensive care units and cardiac intensive care units; The highest rate of delirium is found in postcardiotomy patients
- 40 to 50 percent of patients who are recovering from surgery for hip fractures have an episode of delirium.,
- An estimated 20 percent of patients with severe burns and 30 to 40 percent of patients with acquired immune deficiency syndrome (AIDS).

Risk factors:

- **Very young and elderly patients**
- **Preexisting brain damage (e.g., dementia, cerebrovascular disease, tumor), a history of delirium, alcohol dependence, diabetes, cancer, sensory impairment (e.g., blindness), and malnutrition.**
- **Men more common than women.**
- **The causes of postoperative delirium include the stress of surgery, postoperative pain, insomnia, pain medication, electrolyte imbalances, infection, fever, and blood loss**

Etiology: Major causes include:

- 1. Systemic disease (e.g. infection, trauma, burns).**
- 2. Central nervous system disease (e.g. seizure disorder, brain tumor, SAH)**
- 3. Either intoxication with or withdrawal from prescribed pharmacologic agents or drugs of abuse.**
- 4. Metabolic disorder (e.g. Electrolyte abnormalities, Diabetes, hypoglycemia)**
- 5. Systemic cause (e.g. cardiac failure, renal failure, liver failure, hepatitis)**

Clinical Features:

The syndrome of delirium is almost always caused by one or more systemic or cerebral derangements that affect brain function.

The core features of delirium include

- **altered consciousness, such as decreased level of consciousness;**
- **altered attention, which can include diminished ability to focus, sustain, or shift attention;**
- **impairment in other realms of cognitive function, which can manifest as disorientation (especially to time and space).**
- **decreased memory;**
- **relatively rapid onset (usually hours to days); brief duration (usually days to weeks); and often marked, unpredictable fluctuations in severity and other clinical manifestations during the course of the day, sometimes worse at night (sundowning), which may range from periods of lucidity to severe cognitive impairment and disorganization.**
- **Associated clinical features are often present and may be prominent, they include: disorganization of thought processes (ranging from mild tangentiality to frank incoherence), perceptual disturbances such as illusions and hallucinations,**
- **psychomotor hyperactivity and hypo activity,**
- **disruption of the sleep-wake cycle (often manifested as fragmented sleep at night, with or without daytime drowsiness),**
- **mood alterations (from subtle irritability to obvious dysphoria, anxiety, or even euphoria),**
- **Other manifestations of altered neurological function (e.g., autonomic hyperactivity or instability, myoclonic jerking, and dysarthria).**

Treatment: In treating
delirium,

- The primary goal is to treat the underlying cause.
- The other important goal of treatment is to provide physical, sensory, and environmental support. Physical support is necessary so that delirious patients do not get into situations in which they may have accidents. Patients with delirium should be neither sensory deprived nor overly stimulated by the environment. They are usually helped by having a friend or relative in the room or by the presence of a regular sitter. Familiar pictures and decorations, the presence of a clock or a calendar, and regular orientations to person, place, and time help make patients with delirium comfortable.
- Low dose of high potency antipsychotic may be used for agitation (e.g. 2 -5 mg of haloperidol orally or intramuscularly every 4 hrs.)
- Benzodiazepines (e.g. 1- 2 mg of lorazepam (ativan))also can be used for agitation.
- In rare intractable cases ECT has been of benefit.

DEMENTIA

Dementia is defined as a progressive impairment of cognitive functions occurring in clear consciousness (i.e., in the absence of delirium). Global impairment of intellect is the essential feature, manifested as difficulty with memory, attention, thinking, and comprehension. Other mental functions can often be affected, including mood, personality, judgment, and social behavior that result in significant impairment in social or occupational functioning and cause a significant decline from a previous level of functioning.

Epidemiology: With the aging population, the prevalence of dementia is rising.

- The prevalence of moderate to severe dementia in different population groups is approximately 5 percent in the general population older than 65 years of age,
- 20 to 40 percent in the general population older than 85 years of age,
- 15 to 20 percent in outpatient general medical practices and 50 percent in chronic care facilities.
- The most common type of dementia, dementia of the Alzheimer's type, accounts for 50 to 60 percent of all patients with dementia, with more prevalence in women than men.
- The second most common type is vascular dementia, which is causally related to cerebrovascular diseases. Hypertension predisposes a person to the disease. Vascular dementias account for 15 to 30 percent of all dementia cases. Vascular dementia is most common in persons between the ages of 60 and 70 and is more common in men than in women.
- Other common causes of dementia, each representing 1 to 5 percent of all cases, include head trauma, alcohol-related dementias, and various movement disorder-related dementias, such as Huntington's disease and Parkinson's disease.

Etiology:

- 1. Degenerative dementias: Alzheimer's disease, Parkinson's disease.**
- 2. Miscellaneous: Huntington's disease, Wilson's disease**
- 3. Psychiatric: Pseudo dementia of depression, Cognitive decline in late-life schizophrenia**
- 4. Physiologic: Normal pressure hydrocephalus**
- 5. Metabolic: vitamin deficiencies (e.g., vitamin B₁₂, folate), Endocrinopathies (e.g., hypothyroidism), Chronic metabolic disturbances (e.g., uremia)**
- 6. Tumor: Primary or metastatic (e.g., meningioma or metastatic cancer)**
- 7. Traumatic: Dementia pugilistica, posttraumatic dementia, Subdural hematoma**
- 8. Infection: Prion diseases (e.g., Creutzfeldt-Jakob disease), AIDS.**
- 9. Cardiac, vascular, and anoxia: Infarction, Binswanger's disease, Hemodynamic insufficiency (e.g., hypo perfusion or hypoxia)**
- 10. Demyelinating diseases: Multiple sclerosis.**
- 11. Drugs and toxins: Alcohol, Carbon monoxide.**

Clinical features:

- Memory impairment is typically an early and prominent feature in dementia, Early in the course of dementia, memory impairment is mild and as the course of dementia progresses, memory impairment becomes severe, and only the earliest learned information (e.g., a person's place of birth) is retained.**
- Orientation can be progressively affected during the course of a dementing illness. However, patients show no impairment in their level of consciousness.**
- Dementing processes can affect patients' language abilities. The language difficulty may be characterized by**

a vague, stereotyped, imprecise, or circumstantial locution, and patients may also have difficulty naming objects.

- **Psychiatric and Neurological Changes**
- **Personality:** Patients with dementia may become introverted and seem to be less concerned than they previously were about the effects of their behavior on others. Some patients with marked personality changes may be irritable and explosive.
- **Hallucinations and Delusions:** An estimated 20 to 30 percent of patients with dementia (primarily patients with dementia of the Alzheimer's type) have hallucinations, and 30 to 40 percent have delusions, primarily of a paranoid or persecutory and unsystematized nature, although complex, sustained, and well-systematized delusions are also reported by these patients.
- **Mood:** depression and anxiety are major symptoms in an estimated 40 to 50 percent of patients with dementia, although the full syndrome of depressive disorder may be present in only 10 to 20 percent. Patients with dementia also may exhibit pathological laughter or crying (that is, extremes of emotions with no apparent provocation).
- **Cognitive Change:** apraxias and agnosias are common,
- **Other neurological signs** that can be associated with dementia are seizures, Primitive reflexes, such as the grasp, snout, suck, tonic-foot, and palmomental reflexes, and myoclonic jerks are present.
- **Patients with vascular dementia** may have additional neurological symptoms, such as headaches, dizziness, faintness, weakness, focal neurological signs, and sleep disturbances, possibly attributable to the location of the cerebrovascular disease. Pseudobulbar palsy, dysarthria,

and dysphagia are also more common in vascular dementia than in other dementing conditions.

- **Catastrophic Reaction:** marked by agitation secondary to the subjective awareness of intellectual deficits under stressful circumstances.
- **Lack of judgment and poor impulse control** appear commonly, Examples of these impairments include coarse language, inappropriate jokes, neglect of personal appearance and hygiene, and a general disregard for the conventional rules of social conduct.
- **Sundowner Syndrome:** characterized by drowsiness, confusion, ataxia, and accidental falls. It occurs in older people who are overly sedated and in patients with dementia who react adversely to even a small dose of a psychoactive drug. The syndrome also occurs in demented patients when external stimuli, such as light and interpersonal orienting cues, are diminished.

Treatment:

Treatment is generally supportive.

1. Ensure proper treatment for concurrent medical cause.
2. Provide the environment with frequent cues for orientation to day, date, and time.
3. As functioning decrease, nursing home placement is necessary.
4. Pharmacologic treatment: in general barbiturate and long acting benzodiazepine should be avoided because they worsen cognition, for agitation, low dose of an antipsychotic are effective (2mg oh haloperidol BO or IM).
5. Some clinicians may prescribe short acting benzodiazepine for sleep.

Clinical differentiation between dementia and delirium:

	delirium	dementia
History	Acute disease	Chronic disease
Onset	Rapid	Insidious
Duration	Days to weeks	Months to years
Course	Fluctuating	Progressive
Level of consciousness	Fluctuating Impaired	Normal Intact initially
Orientation	Anxious, irritable	Labile but not usually anxious
Affect	Often disordered	Decreased amount
Thinking	Recent memory markedly impaired	Both recent and remote memory impaired
Memory	Hallucination common (especially visual)	Hallucination less common
Perception	Retarded, agitated, or mixed	Normal
Psychomotor function	Disrupted sleep – wake cycle	Less disruption
Sleep	Prominently impaired	Less impaired
Attention and awareness	Often reversible	Majority not reversible
Reversibility		

Epilepsy

Definitions:

Convulsion : An involuntary, generalized, violent muscular contraction, which might be tonic, clonic, or tonic-clonic.

Prodrome: vague sense that seizure is imminent, may last for hours or days.

Aura: subjective sensation or phenomena that precedes and marks the onset of the epileptic seizure. It may localize the site of origin of the seizure in the brain.

Seizure: transient paroxysmal pathophysiological disturbance of cerebral function caused by a spontaneous and excessive discharge of neurons.

Recurrent seizures = epilepsy

Ictus = seizure

Epidemiology of Epilepsy

Prevalence : about 7 per 1000

Bimodal age distribution :

before 10 , above 60

Male : female = 2

Aetiology:

Epilepsy is classified into:

1. Idiopathic epilepsy
2. Symptomatic epilepsy

The common causes of symptomatic epilepsy are:

1. Cerebrovascular disease (15%)
2. Tumour (6%)
3. Trauma (2%)

The factors that predispose to epilepsy are:

Inheritance

Prenatal and perinatal factors

Trauma or surgery

Cerebrovascular disease

Tumor

Infection and inflammatory conditions

Metabolic disorders

Degenerative diseases

Drug and toxins

Photosensitivity

Classification:

According to International League Against Epilepsy (ILAE 1989)

a. Partial seizures:

simple partial seizure

complex partial seizures

Partial seizures evolving to secondarily generalized seizures.

b. Generalized seizures:

absence seizures

atypical absence seizures

myoclonic seizures

clonic seizures

tonic seizures

tonic-clonic (grand mal) seizures

Atonic seizures.

c. Unclassified seizures

Generalized seizures:

The most common type of generalized seizure is the tonic-clonic seizure.

In these seizures there is loss of consciousness and a tonic phase during which there is sudden spasm of all the muscles of the body for several seconds

There may be tongue biting and loss of control of bladder and bowel.

There follows characteristic rhythmic jerking of the limbs and head (clonic phase) which usually lasts a few minutes.

The patient may be cyanosed during the seizure and increased production of saliva can lead to an appearance of frothing at the mouth.

Confusion is common and many patients wish to sleep after attacks.

Pure tonic and pure clonic seizures usually occur in childhood and are usually briefer than full blown tonic-clonic seizures.

In atonic seizures (drop attacks), which are most common in childhood, sudden loss of consciousness is accompanied by sudden loss of muscle tone and falling to the ground.

In myclonic seizures, there is sudden, brief, shock-like, involuntary muscle contraction.

Absence seizures (petit mal)

Consist of loss of awareness of one's surrounding.

No true loss of consciousness and no convulsive movements during the episodes.

These attacks may be easily provoked by hyperventilation, and EEG reveals characteristic 3 cycle per second spike wave activity.

Partial seizures

1.Simple partial seizure (no alteration in consciousness), symptoms depend on site of discharge; usually arise from a structural lesion, e.g. tumor, vascular lesions of developmental abnormalities.

2.Complex partial seizure

Preictal symptoms (Aura):

Autonomic sensations (e.g. fullness in the stomach, blushing, and changes in respiration).

Cognitive sensations (e.g. déjà vu , jamais vu, forced thinking , and dreamy states)

Affective states (e.g., fear , panic , depression, and elation)

Automatism (e.g., lip smacking, rubbing, and chewing).

Ictal symptoms :

Brief , disorganized ,and uninhibited behavior characterizes the ictal event.

The cognitive symptoms include amnesia for the time during the seizure and a period of resolving delirium after the seizure.

A seizure focus can be found on an EEG in 25 to 50 % of all patients with complex partial epilepsy.

The use of sphenoidal and anterior temporal electrodes and sleep-deprived EEGs may increase the likelihood of finding an EEG abnormality.

Normal EEGs cannot be used to exclude diagnosis of complex partial epilepsy.

Interictal symptoms:

- 1. personality disturbances**
- 2. psychotic symptoms**
- 3. violence**
- 4. mood disorder symptoms**

Personality disturbances :

The most frequent psychiatric abnormalities reported in epileptic patients are personality disorders, and they are especially likely to occur in patients with epilepsy of temporal lobe origin .the most common features are :

- 1. Religiosity:** manifested not only by increased participation in overtly religious activities but also by unusual concern for moral and ethical issues, preoccupation with right and wrong.
- 2. Viscosity of personality** (heightened experience of emotions) which most noticeable in a patient's conversation, which is likely to be slow, serious, ponderous, pedantic, overly replete with nonessential details and often circumstantial.
- 3. Changes in sexual behavior** may be manifested by hypersexuality, deviations in sexual interest, such as fetishism and transvestism and most commonly, hyposexuality

Psychotic symptoms:

Interictal psychotic states are more common than ictal psychoses. Schizophrenia-like interictal episodes can occur in patients with epilepsy, particularly those with temporal lobe origins.

An estimated 10 percent of all patients with complex partial epilepsy have psychotic symptoms.

Risk factors for the symptoms include: female gender, left-handedness, the onset of seizures during puberty, and left-sided lesion.

Classically, psychotic symptoms appear in patients who have had epilepsy for along time, and the onset of psychotic symptoms is preceded by the development of personality changes related to the epileptic brain activity.

The most characteristic symptoms of the psychoses are hallucinations and paranoid delusions.

Patients usually remain warm and appropriate in affect in contrast to the abnormalities of affect commonly seen in patients with schizophrenia.

The thought disorder symptoms in patients with psychotic epilepsy are most commonly those involving conceptualization and circumstantiality rather than the classical schizophrenic symptoms of blocking and looseness.

Violence:

Episodic violence has been a problem in some patients with epilepsy, especially epilepsy of temporal and frontal lobe origin. Whether the violence is a manifestation of the seizure itself or is of interictal psychopathological origin is uncertain. Most evidence points to the extreme rarity of violence as an ictal phenomenon. Only in rare cases should an epileptic patient's violence be attributed to seizure itself.

Mood disorder symptoms: , such as depression and mania, are seen less often in epilepsy than are schizophrenia like symptoms. The mood disorder symptoms that do occur tend to be episodic and appear most often when the epileptic foci affect the temporal lobe of the non dominant cerebral hemisphere.

Diagnosis

A correct diagnosis of epilepsy can be particularly difficult when the ictal & interictal symptoms of epilepsy are severe manifestations of psychiatric symptoms in the absence of significant changes in consciousness and cognitive abilities. For patients who have previously diagnosed as epilepsy, the appearance of new psychiatric symptoms should be considered as possibly representing an evolution in their epileptic symptoms.

In patients who have not previously diagnosed as epilepsy, four characteristics should cause a clinician to be suspicious of the possibility:

1. the abrupt onset of psychosis in a person previously regarded as psychologically healthy,
2. the abrupt onset of delirium without a recognized cause,
3. a history of similar episodes with abrupt onset & spontaneous recovery, and
4. a history of previous unexplained falling or fainting spells.

Treatment:

Principles of treatment with anticonvulsant drugs:

- (a) ensure good compliance;
- (b) use monotherapy;
- (c) start at a low dose;
- (d) measure anticonvulsant level;
- (e) if an adequate trial of an appropriate drug fails, consider the following:
 1. wrong diagnosis;
 2. poor compliance;
 3. wrong drug; or
 4. refractory epilepsy;
- (f) if a drug fails to control seizure, introduce a new drug and increase the dose.

Choice of anticonvulsant drug:

First-line drugs for generalized tonic-clonic seizures are valproate & phenytoin

First-line drugs for TLE are carbamazepine & phenytoin

First-line drugs for petit mal seizures are ethosuximide & valproate In general;

The psychiatrist is likely to meet 4 kinds of problem in relation to epilepsy:

- 1- differential diagnosis of episodic disturbances of behaviour (particularly 'atypical' attacks, aggressive behaviour, and sleep problems.
- 2- the treatment of the psychiatric and social complications of epilepsy.
- 3- the treatment of epilepsy itself.
- 4- the psychological side-effects of anticonvulsant drugs.

Relationship of Epilepsy and Psychiatric Disorders

- - Disorders of the same etiology .
- - Disorders associated with the occurrence of seizure .
- - Inter-ictal disorders .
- - Disorders due to antiepileptic agents

Disorders of the same etiology:

- Focal brain lesions ; mass , degenerations ..
- Multi-infarct dementia
- Alzheimer disease
- Learning Disabilities (30-40 %)

Disorders associated with the occurrence of seizure

- 1-Pre-ictal ; Aura , irritable & disturbed mood for hours , days , or weeks .
- 2- Ictal ;
 - complex-partial seizure
 - absence , or complex partial non- convulsive statuses , some time may only have abnormal mental state manifestations , and easily misdiagnosed .
 - epileptic pseudodementia (non convulsive status)
- 3- Post-ictal ;
 - Impaired consciousness
 - Impaired memory
 - Delirium
 - Psychosis
 - Automatism
 - Todd's paresis

- Disorders due to antiepileptic agents

- - **Mild–moderate degrees of depression** been recorded , specially with carbamazepine .
- - **Vigabatrin and topiramate can precipitate psychotic and affective symptoms in 3-10% of patients.**
 - **Vigabatrin frequently produces marked cognitive impairment. –**

Generally ; the prevalence of psychiatric illnesses among epileptic patients are more than that of general population , except for bipolar disorders, which found to be no more than general population .

- **30-50 % of epileptic patients have psychiatric difficulties**