

Organic mental disorders

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- Credit Hrs : 1 ; ECTS : 2
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Organic mental disorders

COURSE DESCRIPTION:

The course is designed to prepare students to identify, understand and define the different types of organic mental disorders:-

- Define, know epidemiology and causes of organic mental d/os
- Classifications
- Differential diagnosis
- Treatment of such disorders

Organic mental disorders

COURSE OBJECTIVES:

General objectives:

- After completing this course students will be able to identify, understand and define the different types of organic mental disorders, epidemiology and causes, differential diagnosis, treatment of cases.

Organic mental disorders

Specific Objectives

- Describe the presenting complaints of patients with organic mental disorders.
- Describe the diagnostic features of organic mental disorders.
- Discuss DSM-5 diagnostic criteria of d/t organic mental disorders
- Differentiate between each of the organic mental disorders

Organic mental disorders

1. Kaplan & Sadock's Comprehensive Text book of Psychiatry (2015, 11th edit.)
2. Diagnostics and Statistical Manual of mental health disorders (1994, 4th edit)
3. DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS FIFTH EDITION DSM-5TM ;2013 (American Psychiatric Association)



Organic mental disorders

Definition

- ❧ Group of mental disturbances results from brain dysfunction connected with brain disease, degeneration
- ❧ Group of mental disturbances results from brain damage/trauma
- ❧ Mental symptoms caused by somatic diseases or by substances

Etiology of organic mental d/os

➤ PRIMARY

✧ Brain disease

✧ Brain degeneration

✧ Trauma

➤ Secondary

✧ General medical condition

✧ Substances (alcohol and drugs)

Psychopathologies in organic mental d/os

- **Category I symptoms**
 - **Cognitive disturbances:**
 - **Memory**
 - **Learning abilities**
 - **Intellect**
 - **Disturbances of sensorium**

Psychopathologies cont.....

➤ Category II symptoms:

⌘ Hallucinations

⌘ Delusions

⌘ Mood and emotion disturbances

⌘ Personality/behavioral changes

Classifications

1. Delirium
2. Dementia (Major NCD)
3. Amnestic disorders
4. Other organic mental disorders

Delirium

- ✧ Is a disturbance in attention and awareness of the environment
- ✧ Develops over a short period of time(hours to a few days)
- ✧ Fluctuate in severity during the course of a day,
- ✧ Additional cognitive disturbance as memory, orientation, language, perception and others;

Cont.

- ❧ Not due to another neurocognitive disorder or in the context of severely reduced level of arousal such as coma
- ❧ There is evidence that disturbance is a direct physiological consequence of another medical condition, substance intoxication or withdrawal or exposure to toxin or is due to multiple etiologies

Cont.....

- ❧ A life threatening, yet potentially reversible disorder of the CNS
- ❧ Delirium often involves perceptual disturbances, abnormal psychomotor activity, and sleep cycle impairment.
- ❧ Delirium is often under-recognized by health care workers.

Delirium by other names

Intensive care unit psychosis
Acute confusional state
Acute brain failure
Encephalitis
Encephalopathy
Toxic metabolic state
Central nervous system toxicity
Paraneoplastic limbic encephalitis
Sundowning
Cerebral insufficiency
Organic brain syndrome

Sub-types

- 1. Hyperactive:** a hyperactive level of psychomotor activity that may be accompanied by mood lability, refusal to cooperate with medical care
- 2. Hypoactive:** The individual has a hypoactive level of psychomotor activity that may be accompanied by sluggishness and lethargy that approaches stupor

Cont...

3. Mixed level of activity:

- Normal level of psychomotor activity even though attention and awareness are disturbed
- Also includes individuals whose activity level rapidly fluctuates

Clinical features

- ❧ The cardinal feature is disturbed consciousness as drowsiness, decreased awareness of the surroundings, disorientation and distractibility
- ❧ There is mental slowness, perceptual abnormalities, and disorganization of sleep wake cycle
- ❧ It is worse at night
- ❧ There is restlessness and hyperactivity or hypoactive with retardation and perseveration

Clinical features cont

- Ideas of reference, persecutory delusions which are transient and poorly elaborated
- Misinterpretation and illusions
- Visual hallucinations, tactile and auditory hallucinations
- Anxiety, depression and emotional lability
- Depersonalization and Derealization

CONT....

- A change in the level of awareness and the ability to focus, sustain, or shift attention.

Change in cognition

- Delirious individuals have cognitive and perceptual problems, including memory loss, disorientation, and difficulty with language and speech

Temporal course

- Delirium develops over hours to days and typically persists for days to months

Elderly patients

- Patients with delirium are sick by definition
- ✧ However, older patients with delirium often do not look sick apart from their behavioral change

Other features

- A variety of other clinical manifestations including
- Psychomotor agitation
- Sleep-wake reversals
- Irritability, anxiety, emotional lability, and
- Hypersensitivity to lights and sounds

Emotional disturbance in delirium

- ❧ Emotional disturbances, such as anxiety, fear, depression, irritability, anger, euphoria, and apathy
- ❧ Rapid and unpredictable shifts from one emotional state to another
- ❧ These behaviors are especially prevalent at night and under conditions in which stimulation and environmental cues are lacking

Summary of clinical features

1. Acute
2. Clouding of consciousness
3. Disorientation (mostly time, severe cases place and person)
4. Short attention span/distractibility
5. Perceptual Distortion(illusion& hallucinations)
6. Disturbance in sleep wake cycle(insomnia& daytime sleepiness)

Cont....

8. Sun Downing – increased severity in evening
9. New Memory Impairment(Immediate/recent & Relatively intact remote memory).

Cont...

D – disorientation

E – easy distracted

L – level of consciousness altered (fluctuation)

I – incoherent speech

R – restlessness

I – interrupted sleep

U – unreal perception

M – memory loss (recent) – common in delirium & dementia

Diagnostic Criteria(DSM-v)

1. A disturbance in attention
2. The disturbance develops over short period of time
3. An additional disturbance in cognition
4. 1 & 3 above are not 2ry to dementia and coma
5. Evidence for AMC, substance I/w, toxins, multiple etiologies

EPIDEMIOLOGY

- ❧ The prevalence of delirium is highest among hospitalized older individuals and varies depending on the individuals' characteristics, setting of care, and sensitivity of the detection method
- ❧ The prevalence of delirium in the community overall is low (1%-2%) but increases with age, rising to 14% among individuals older than 85 years
- ❧ The prevalence is 10%-30% in older individuals presenting to emergency departments, where the delirium often indicates a medical illness


Cont....

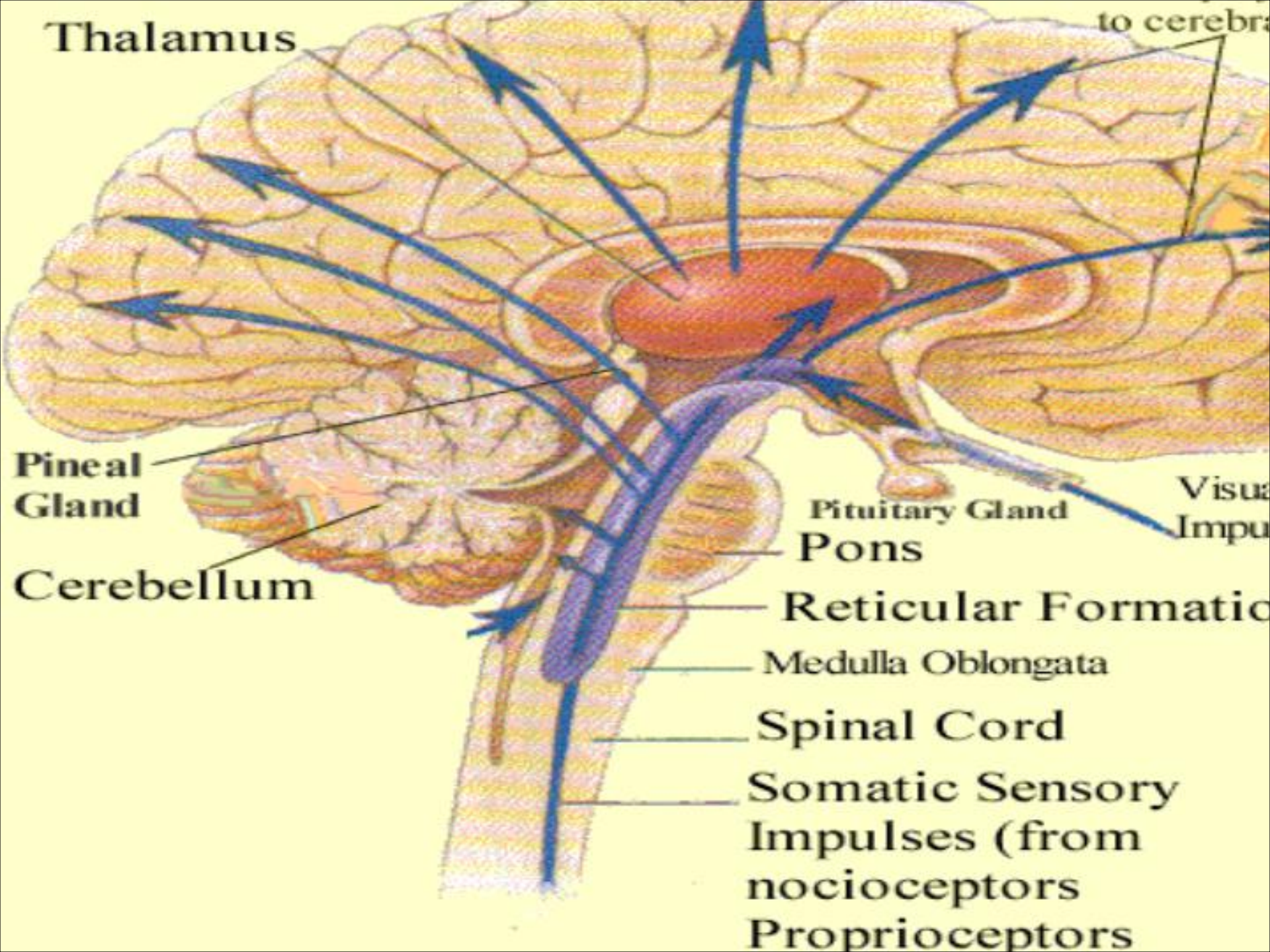
- ❧ The prevalence of delirium when individuals are admitted to the hospital ranges from 14% to 24%,
- ❧ Delirium occurs in 15%-53% of older individuals postoperatively
- ❧ 70%-87% of individuals in intensive care unit
- ❧ Up to 60% of individuals in nursing homes or post-acute care settings and
- ❧ Up to 83% of all individuals at the end of life

PATHOGENESIS

Neurobiology of attention

- Arousal and attention may be disrupted by brain lesions involving the ascending reticular activating system (ARAS)
- Attention in both right and left aspects of extra-personal space is governed by the "non-dominant" parietal and frontal lobes
- Thus with inattention, there is typically some disruption of the integrated function of these regions


- 
- Insight and judgment are dependent on intact higher order integrated cortical function
 - Insight into perceptions is often reduced with delirium and confusional states



PATHOGENESIS

Cortical versus sub-cortical mechanisms

- ✧ Studies using EEG in acutely ill patients established that delirium was a disturbance of global cortical function
- ✧ Characterized by slowing of the dominant posterior alpha rhythm and the appearance of abnormal slow-wave activity.
- ✧ These are so consistent that EEG can be used to resolve uncertainty in patients if the diagnosis of delirium is in doubt

- 
- The results of brainstem auditory evoked potential, somatosensory evoked potentials, and neuroimaging studies have supported an important role for subcortical(eg, thalamus, basal ganglia, and pontine reticular formation) as well as cortical structures in the pathogenesis of delirium

Pathogenesis

Neurotransmitter and humoral mechanisms

- Acetylcholine plays a key role in the pathogenesis of delirium
- Anticholinergic drugs cause delirium when given to healthy volunteers and are even more likely to lead to acute confusion in frail elderly persons
- This effect can be reversed with cholinesterase inhibitors such as Physostigmine
- Alzheimer's disease, which is characterized by a loss of cholinergic neurons, increases the risk of delirium due to anticholinergic medications

Risk factors

- Delirium is a multi-factorial disorder
- Factors that increase the risk for delirium:
 - **those that increase baseline vulnerability
- Advanced age and sensory impairment
- Polypharmacy (particularly psychoactive drugs and anticholinergics)
- Infection
- Dehydration
- Immobility (including restraint use)
- Malnutrition
- Use of bladder catheters

Risk factors

✧ The most commonly identified risk factors are underlying brain diseases:

- NCD
- Stroke
- Parkinson's disease

→ these are present in nearly one-half of older patients with delirium

Delirium

Causes of delirium:

- Drugs & alcohol intoxication, withdrawal
- ∞ delirium tremens, opiates, prescribed drugs, Anticholinergics, sedatives, digoxin, diuretics, lithium, and steroids
- Medical conditions, febrile illnesses, septicemia, organ failure (cardiac, renal, hepatic), hyper or hypoglycemia, postoperative hypoxia, Thiamine deficiency

cont.....

- Neurological conditions(epileptic seizures or postictal, head injury, space occupying lesions, encephalitis, cerebral hemorrhage)
- Constipation
- Dehydration,
- Pain and sensory deprivation



∞ In general risk factors for delirium can be categorized as

1. Predisposing
2. Precipitating

Predisposing factors

- ⌘ >60 years of age
- ⌘ Male sex
- ⌘ Visual impairment
- ⌘ Underlying brain pathology such as stroke, tumor, vasculitis, trauma, dementia
- ⌘ Major medical illness
- ⌘ Recent major surgery

Predisposing cont.....

- ⌘ Depression
- ⌘ Functional dependence
- ⌘ Dehydration
- ⌘ Substance abuse/dependence
- ⌘ Hip fx
- ⌘ Metabolic abnormalities
- ⌘ Polypharmacy

Precipitating factors

⌘ Meds

⌘ Severe acute illness

⌘ UTI

⌘ Hyponatremia

⌘ Hypoxemia

⌘ Shock

⌘ Anemia

⌘ Pain

Precipitating cont.....

- ✧ Orthopedic surgery
- ✧ Cardiac surgery
- ✧ ICU admission
- ✧ High number of hospital procedures

DIFFERENTIAL DIAGNOSIS

1. Sundowning:

- Behavioral deterioration seen in the evening hours, typically in demented, institutionalized patients who may be suffering the effects of impaired circadian regulation in the institutional environment

2. Focal syndromes: A number of lobar or focal neurologic syndromes may mimic delirium.

⌘ Temporal-parietal:

- Patients with Wernicke's aphasia may appear delirious in that they do not comprehend or obey and seem confused

∞ **Occipital:**

–Anton's blindness (Anton-Babinski syndrome) of cortical blindness and confabulation might be confused with delirium. However, the patient will betray his or her lack of vision, if one is observant

∞ **Frontal:**

–Patients with bifrontal lesions (eg, from tumor or trauma) often show akinetic mutism, lack of spontaneity, lack of judgment, problems with recent or working memory, blunted or labile emotional responses, and incontinence

Cont....

3. Non-convulsive status:

- Non-convulsive status epileptics (NCSE) requires an EEG for detection and continuous EEG for management. acute aphasia or neglect without a structural lesion

4. Major NCD:

Differential Diagnoses

4. Primary psychiatric illnesses:

- **Depression.** Associated with poor sleep and difficulty with attention or concentration. Agitated depression may be especially problematic. Depression is associated with dysphoria, and there is less fluctuation than in delirium.
- **Mania.** Can be confused with hyperactive delirium with agitation, delusions, and psychotic behavior. However, mania is usually associated with a history of previous episodes of mania or depression.
- **Schizophrenia.** The delusions are usually highly systematized, the history is longer, and the sensorium is otherwise clear.

Evaluation of delirium

- There are two important aspects to the diagnostic evaluation of delirium:
 1. Recognizing that the disorder is present
 2. Uncovering the underlying medical illness that has caused delirium

ASSESSMENT

Recognizing the disorder:

- Clinicians often fail to recognize delirium
- This happens in more than 70 percent of cases
- Behavioral problems or cognitive impairment may be wrongly attributed to the patient's age, to dementia, or to other mental disorders
- Determining that cognitive impairment is not due to a prior dementia requires knowledge of the patient's baseline level of functioning

Assessment

Confusion Assessment Method (CAM):

1. Acute onset and fluctuating course [yes] [no]
 - (Is there evidence of an acute change in mental status from the patient's baseline? Did this behavior fluctuate during the past day, that is, tend to come and go or increase and decrease in severity?)
2. Inattention [yes] [no]
 - (Does the patient have difficulty focusing attention, for example, being easily distractible, or having difficulty keeping track of what is being said?)
3. Disorganized Thinking [yes] [no]
 - (Is the patient's speech disorganized or incoherent, such as rambling or irrelevant conversation, unclear or illogical flow of ideas, or unpredictable switching from subject to subject?)
4. Altered level of consciousness [yes] [no]
 - Overall, how would you rate this patient's level of consciousness? Alert (normal), Vigilant (hyperalert), Lethargic (drowsy, easily aroused), Stupor (difficult to arouse), Coma (unarousable)
 - The diagnosis of Delirium requires a "yes" answer for criteria 1 and 2 and either 3 or 4

Investigating medical etiologies

- Fluid and electrolyte disturbances (dehydration, hyponatremia and hypernatremia)
- Infections (urinary tract, respiratory tract, skin and soft tissue)
- Drug or alcohol toxicity
- Withdrawal from alcohol
- Withdrawal from barbiturates, benzodiazepines, and selective serotonin reuptake inhibitors
- Metabolic disorders (hypoglycemia, hypercalcemia, uremia, liver failure, thyrotoxicosis)
- Low perfusion states (shock, heart failure)
- Postoperative states, especially in the elderly

Medication review

- Drug toxicity accounts for approximately 30 percent of all cases of delirium
- Most important initial step is a medication review
- Do not forget over-the-counter agents
- Look for drugs prescribed by other physicians, or drugs belonging to other household members
- Ask a family member to clean out the medicine cabinet and bring the contents for review

LABORATORY TESTING

- Serum electrolytes, creatinine, glucose, complete blood count, and urinalysis
- Drug levels should be ordered where appropriate (digoxin, lithium, or quinidine)
- Toxin screen of blood and urine
- Blood gas determination is often helpful
- Thyroid function and vitamin B₁₂ levels

Neuroimaging

- Head CT should be used selectively rather than routinely for most patients with delirium
- MRI is more sensitive than head CT for acute stroke, posterior fossa lesions, and white matter lesions
- However, neuroimaging is necessary, if no obvious cause of delirium is apparent on first evaluation
- In patients with delirium of unknown cause and negative head CT, MRI may be useful to exclude acute or subacute stroke and multifocal inflammatory lesions

EEG testing

- Electroencephalography (EEG) is useful in patients with altered consciousness in order to:
- Exclude seizures, especially nonconvulsive or subclinical seizures
- Confirm the diagnosis of certain metabolic encephalopathies or infectious encephalitides that have characteristic EEG patterns
- EEG evaluation should be obtained for any patient with altered consciousness of unknown etiology

Management of delirium

It is a medical emergency

- The underlying cause must be treated
- drugs must be suspected as a common cause
- Urgent investigations are necessary
- General measures to relieve distress, control agitation and prevent exhaustion
- Frequent explanation, reorientation, and reassurance
- Avoid unnecessary staff changes and encourage relatives to be with the patient, nursing in a quiet single room with adequate lighting

Treatments

SUPPORTIVE CARE:

An interdisciplinary approach to delirium should focus upon:

- ✧ maintaining adequate hydration and nutrition
- ✧ enhancing mobility and range of motion
- ✧ treating pain and discomfort
- ✧ preventing skin breakdown
- ✧ ameliorating incontinence (seen in over half of delirious patients)
- ✧ minimizing the risk of aspiration pneumonitis

Treatments

MANAGING BEHAVIORS

- Managing disruptive behavior is the most challenging aspect of delirium therapy
- Mild confusion and agitation may respond to interpersonal and environmental manipulations
- Frequent reassurance, touch, and verbal orientation from familiar persons lessen disruptive behaviors

Treatments

- ∞ Physical restraints should be used only as a last resort
- Lead to increased agitation and create additional morbidity
- Constant observation, preferably by someone familiar to the patient, is less traumatic
- Constant observation, by avoiding further complications, may be more cost-effective in the long run than restraining or sedating the patient

Treatments

PSYCHOTROPIC MEDICATIONS:

- Prompt symptom control
- A cautious trial of psychotropic medication is warranted in these circumstances
- They appear to have similar efficacy to haloperidol
- Benzodiazepines have a more rapid onset of action (five minutes after parenteral administration) than the antipsychotics, but they commonly worsen confusion with sedation and/or agitation

Drug treatment

- ❧ Used to treat the underlying cause, control agitation and distress and allow adequate sleep
- ❖ Haloperidol is used and some cases are treated with atypical antipsychotics
- ❖ Chlordiazepoxide is used in DTs

Outcomes of Delirium

- ∞ Delirium has an enormous impact upon the health of older persons
- ∞ Patients with delirium experience prolonged hospitalizations, functional decline, and are at high risk for institutionalization (43% at 6 months post admission)
- Signs of delirium may persist for 12 months or longer, particularly in those with underlying dementia
- Thus, although delirium is considered potentially reversible, it is often a predictor of future problems for frail, elderly persons

Outcome

- ❑ Many cases recover rapidly
- ❑ The outcome is worse in the elderly, preexisting dementia or physical illness
- ❑ Delirium in the elderly increases the risk of death in the next two years, institutionalization and risk of NCD
- ❧ Mortality among hospitalized individuals with delirium is high, and as many as 40% of individuals with delirium, particularly those with malignancies and other significant underlying medical illness, die within a year after diagnosis

Delirium Tremens

- ❧ Alcohol is a central nervous system depressant
- ❧ it rapidly increases the release of γ -aminobutyric acid (GABA) in the brain
- ❧ it inhibits postsynaptic *N-methyl-d-aspartate glutamate receptor* activity
- ❧ With repeated exposure, the brain adapts to the effects of alcohol through changes in receptors and other proteins (tolerance)
- ❧ Subsequent reductions in blood alcohol levels lead to symptoms that are, in general, the opposite of the acute effects of the drug

✧ withdrawal symptoms usually begin within 8 hours after blood alcohol levels decrease, peak at about 72 hours, and are markedly reduced by day 5 through 7 of abstinence

✧ Most studies estimate that 3 to 5% of patients who are hospitalized for alcohol withdrawal meet the criteria for withdrawal delirium

✧ Withdrawal delirium usually begins about 3 days after the appearance of symptoms of alcohol withdrawal and lasts from 1 to 8 days or more (usually 2 or 3 days)

Table 2. DSM-5 Criteria for Withdrawal Delirium (Delirium Tremens).*

Criteria for alcohol withdrawal

Cessation of or reduction in heavy and prolonged use of alcohol

At least two of eight possible symptoms after reduced use of alcohol:

Autonomic hyperactivity

Hand tremor

Insomnia

Nausea or vomiting

Transient hallucinations or illusions

Psychomotor agitation

Anxiety

Generalized tonic–clonic seizures

Criteria for delirium

Decreased attention and awareness

Disturbance in attention, awareness, memory, orientation, language, visuo-spatial ability, perception, or all of these abilities that is a change from the normal level and fluctuates in severity during the day

Disturbances in memory, orientation, language, visuospatial ability, or perception

No evidence of coma or other evolving neurocognitive disorders

✧ Approximately 1 to 4% of hospitalized patients who have withdrawal delirium die

✧ Death usually results from hyperthermia, cardiac arrhythmias, complications of withdrawal seizures, or concomitant medical disorders

Treatment of withdrawal delirium

- ❧ The best approach to the prevention of withdrawal delirium is the identification and treatment of preexisting concomitant medical problems and withdrawal syndromes
- ❧ The major treatment goals for withdrawal delirium are to control agitation, decrease the risk of seizures, and decrease the risk of injury and death

Table 3. Suggested Treatment of Alcohol Withdrawal Delirium (Delirium Tremens).

Provide care in an inpatient setting, preferably an intensive care unit.

Perform a workup to rule out medical conditions and measure values such as the levels of electrolytes and pancreatic enzymes, hematocrit, and platelet counts; perform liver-function tests.

Provide supportive care by monitoring vital signs frequently (e.g., every 15–30 min) in a quiet, well-lit room. Reorient patient to time, place, and person.

Administer thiamine intravenously at a dose of 500 mg once or twice a day for 3 days; monitor patient for overhydration.^{9,18-20}

Provide medications to control agitation, promote sleep, and raise the seizure threshold.

Administer primary pharmacotherapy with the use of benzodiazepines, preferably intravenously, in doses high enough to achieve a lightly dozing but still arousable state, while monitoring the patient's vital signs until delirium abates (approximately 3 days).⁹ The dose on day 1 is the amount needed to control target symptoms (e.g., diazepam at a dose of 15 mg).

Examples of diazepam regimens^{9,21,22}:

Regimen 1²¹: administer 10–20 mg intravenously or orally every 1–4 hr, as needed.

Regimen 2²¹:

Begin treatment with 5 mg intravenously (2.5 mg/min).⁹

If needed, repeat 10 min later.

If needed, administer 10 mg intravenously 10 min later.

If needed, administer 10 mg again 10 min later.

If needed, administer 20 mg 10 min later.

Continue to administer 5–20 mg/hr, as needed.

Examples of lorazepam regimens^{9,22}:

Regimen 1²²: administer 8 mg intravenously, intramuscularly, or orally every 15 min, as needed. After the patient has received 16 mg, if delirium is still severe, administer an 8-mg bolus intravenously. Then administer 10–30 mg/hr.

Regimen 2²²:

Administer 1 to 4 mg intravenously every 5–15 min,⁹ as needed.

Alternatively, administer 1–40 mg intramuscularly every 30–60 min, as needed.

Continue dosing every hr as needed to maintain somnolence.

In addition to benzodiazepines, administer adjunctive medications such as the antipsychotic agent haloperidol^{23,24} for uncontrolled agitation or hallucinations (0.5–5.0 mg intravenously or intramuscularly every 30–60 min as needed for severe agitation or hallucinosis — not to exceed 20 mg; or 0.5–5.0 mg orally every 4 hr up to 30 mg).

Case scenario

1. Mr E is a 71 years old gentleman with hx of asthma, BPH and HTN admitted to medicine 3 days ago for bilateral lower extremity cellulitis. At the time of admission he was cooperative and oriented but over the past 24 hours has become occasionally confused, agitated, uncooperative and somnolent. He appears to be talking to someone in his room when no one is there.
 - A. What is the most probable diagnosis for this patient?
 - B. B. what intervention modalities are recommended ?

Case scenario-2

2. Mr R is 83 yo gentleman with a long history of hypertension, diabetes with peripheral neuropathy and occasional angina admitted to medicine 4 days ago for failure to thrive. Two weeks prior to admission he missed his weekly bridge game which he has not done in 12 years. The day prior to admit his friend found him asleep in front of the TV and was difficult to rouse. He was minimally communicative, had been incontinent of urine and hadn't eaten in several days. His friend denied history of mental illness, substance abuse and noted he is usually social and friendly.

On admission he was calm, cooperative but withdrawn. He was hyponatremic and had a UTI which have been treated but remains somnolent and withdrawn. Medicine is requesting assistance for evaluation of depression.

Current meds: insulin, atenolol, lisinopril, temazepam, azithromycin, aspirin.

On exam he is quite, answers questions with monosyllabic answers, has poor eye contact and scores a 9/30 on MMSE with very poor effort.

- A. What would be the probable diagnosis for this patient?
- B. How could you manage this patient ?



Thank You