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Delirium in Older Patients

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review article

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Why is it important?

Why is it important?

- Delirium affects as many as half of all people over age 65 who are hospitalized

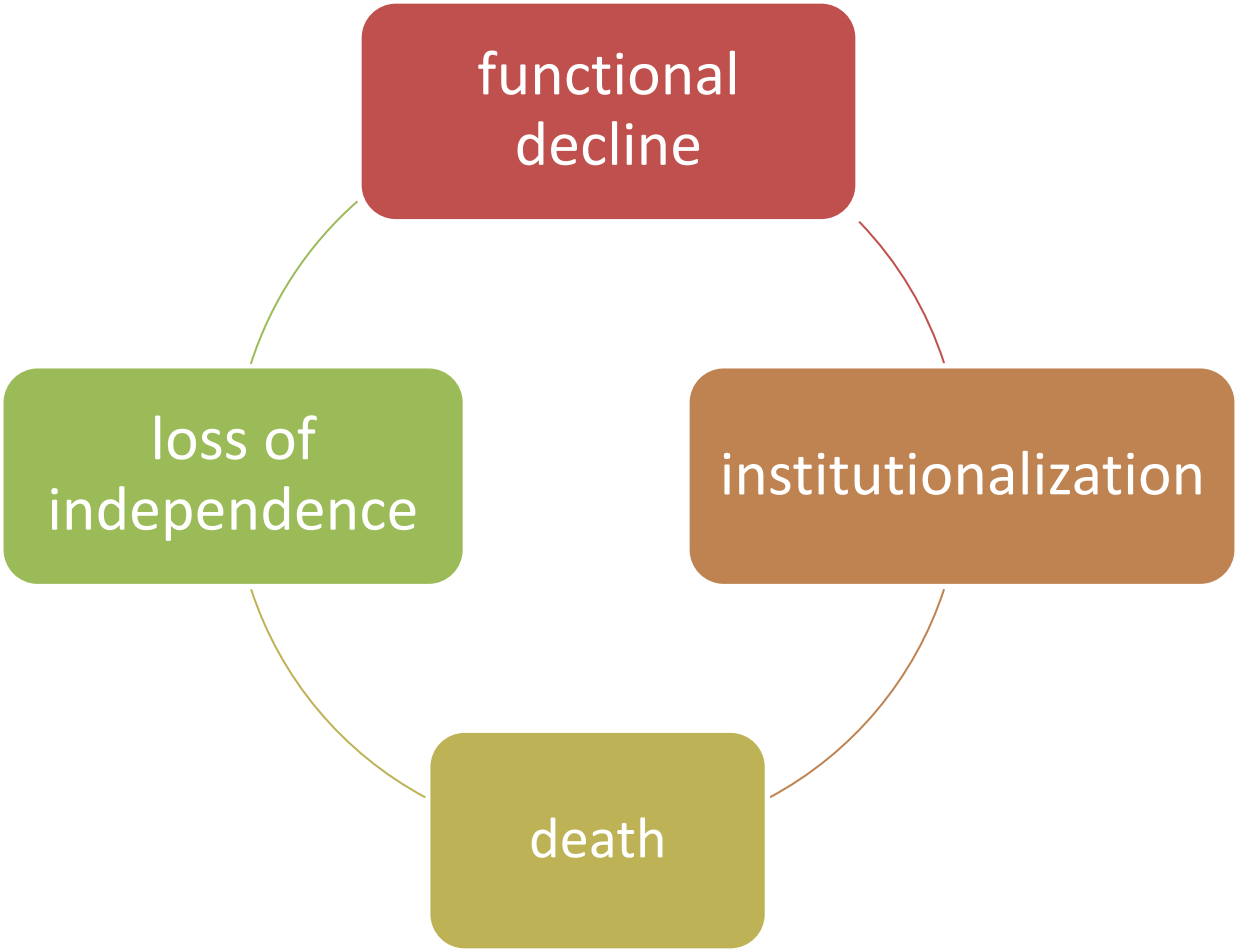
- persons aged 65 and older presently account for more than 45% of all days of hospital care.
- increases hospital costs by an average of $1000 per patient
- posthospital costs by over $10,000 per patient-year

Why is it important?

- delirium is preventable in 30% to 40% of cases

- after hospital discharge increased need for institutionalization, rehabilitation services, closer medical follow-up, and home health care.

Why is it important?

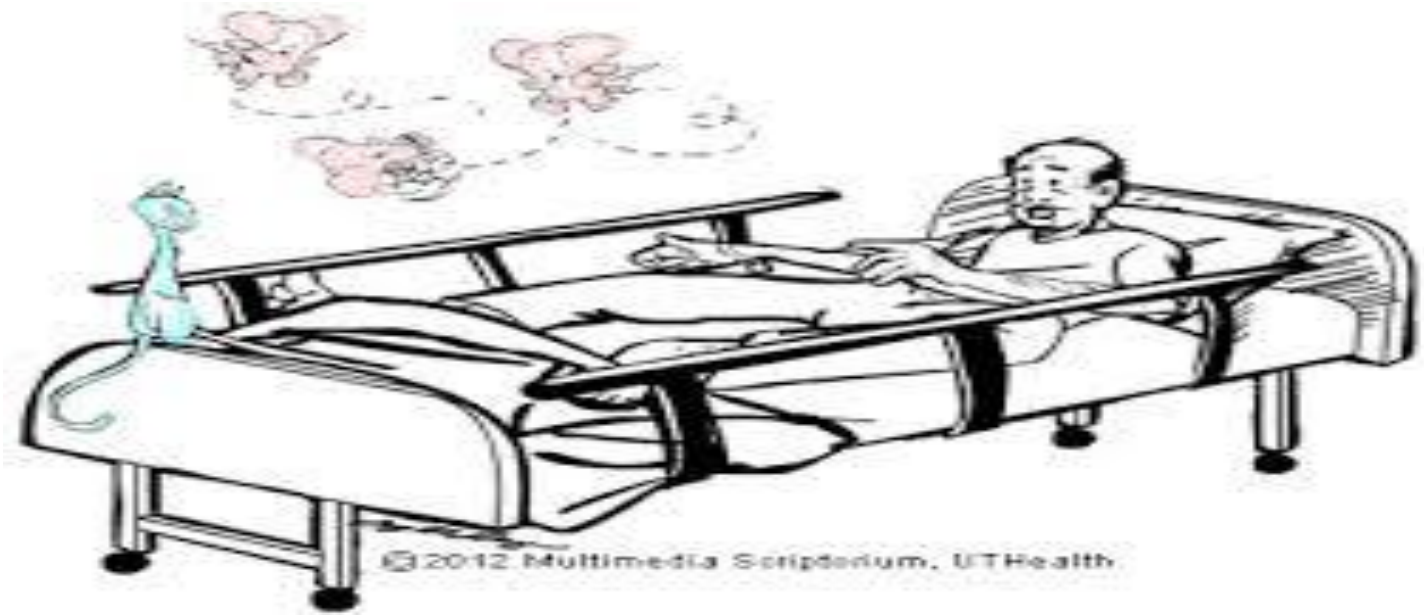


What is delirium?
DSM IV criteria

- (A) a disturbance in attention and awaremeness
- (B) an acute onset and fluctuating course
- (C) an additional deficit in cognition (such as memory,orientation, language, or visuoperceptual ability)
-
- (D) impairments not better explained by dementia and do not occur in context of severely impaired level of consciousness or coma
- (E) evidence of an underlying medical etiology or multiple etiologies

How common is it?

- the intensive care unit : 19% to 82%
- posthip fracture settings: 12% to 51%
- the emergency department :8% to 17%



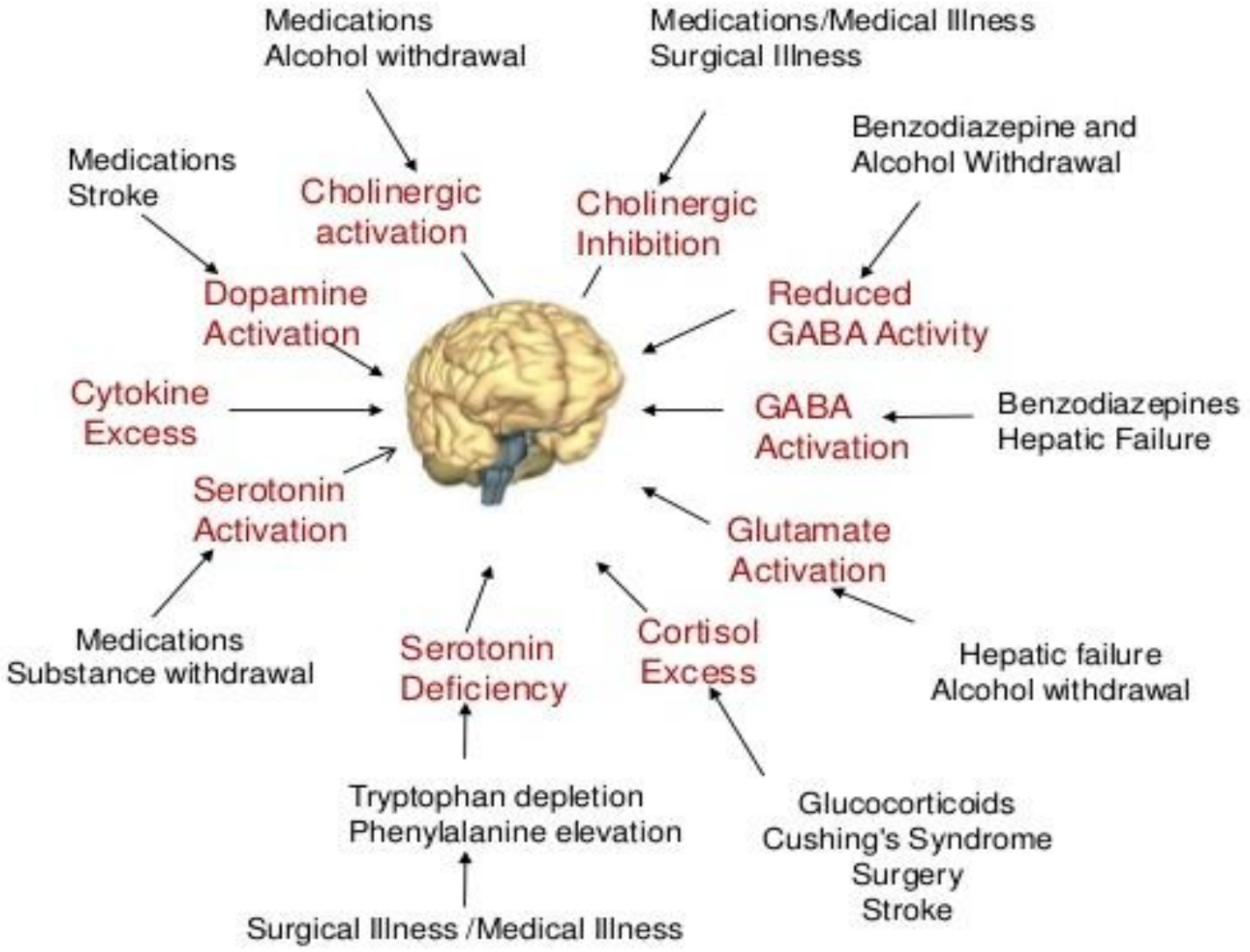
How common is it?

- often unrecognized
- clinicians fail to detect up to 70% of affected patients across all of these settings
- The presence of delirium portends a potentially poor prognosis

How common is it?

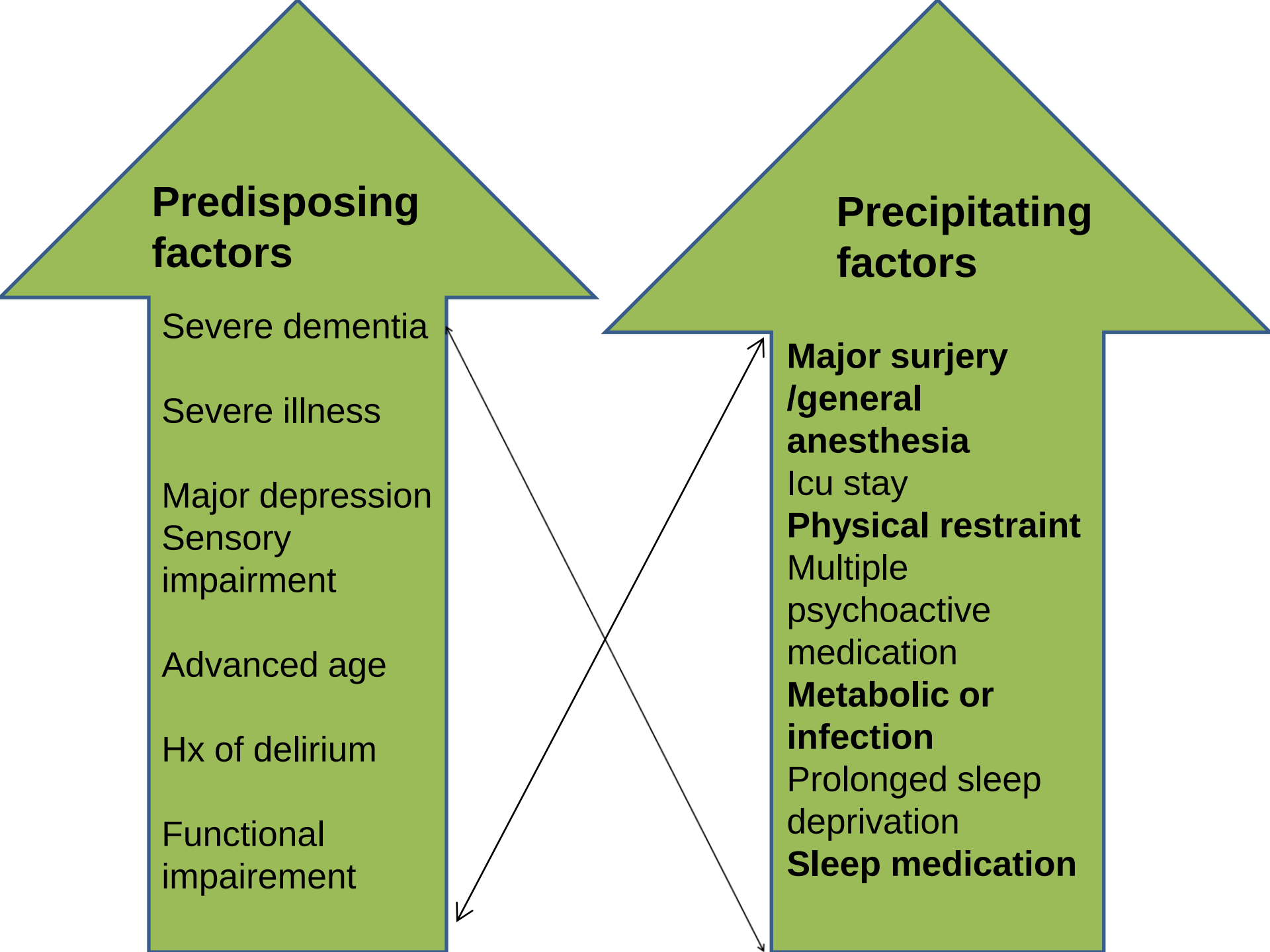
- hospital mortality rates: 22% to 76%
- as high as mortality rates associated with acute MI or sepsis.
- the additional 1-year mortality rate associated with cases of delirium is 35% to 40%.

PATHOPHYSIOLOGY



Who gets delirium?
Anyone!

What are the most common causes?


Predisposing factors
Severe dementia
Severe illness
Major depression
Sensory impairment
Advanced age
Hx of delirium
Functional impairement
Precipitating factors
Major surjery /general anesthesia
Icu stay
Physical restraint
Multiple psychoactive medication
Metabolic or infection
Prolonged sleep deprivation
Sleep medication

Predisposing factors

- Dementia or underlying cognitive impairment
- Severe illness
- Comorbidity
- Depression
- Vision and/or hearing impairment
- Functional impairment
- History of transient ischemia or stroke
- History of alcohol abuse
- History of delirium
- Advanced age (> 70)

Precipitating factors

- Drugs, including polypharmacy, psychoactive, and sedatives or hypnotics
- Use of physical restraints
- Indwelling bladder catheters
- Dehydration
- Poor nutritional status, abnormal serum albumin
- Iatrogenic complications
- Major surgical procedure (eg, aortic aneurysm repair, noncardiac thoracic surgery, and neurosurgery)
- Metabolic derangements (electrolytes, glucose, metabolic acidosis)
- Infection
- Trauma admission
- Urgent admission
- Coma

Drug Use and Delirium

- In 40% or more of delirium cases, use of one or more specific medication contributes to its development.
- While medications often incite delirium, they are also the most common remediable cause of delirium
- those with known psychoactive effects,such as sedative hypnotics, anxiolytics, narcotics, H2 blockers, and medications with anticholinergic activity

MEDICATIONS ASSOCIATED WITH COGNITIVE IMPAIRMENT AND DELIRIUM (BEERS CRITERIA, 2012)

H2-receptor antagonists

Meperidine

Sedative hypnotics

Thioridazine

Zolpidem

Corticosteroids

All tricyclic antidepressants

Anticholinergics (including antihistamines, antiparkinsonian agents, skeletal muscle relaxants, antidepressants, antimuscarinics, antispasmodics)

Benzodiazepines

Chlorpromazine

Antipsychotics (chronic and as-needed use)

Relationship Between Delirium and Dementia

- after delirium, at least some patients never recover their baseline level of cognitive function.

- Dementia is the leading risk factor for delirium, and fully two-thirds of cases of delirium occur in patients with dementia

- alter the course of an underlying dementia, resulting in more rapid progression of functional losses and worse long-term outcomes

How is it diagnosed?
Short Confusion Assessment Method

1. Acute onset or fluctuating course

AND

2. Inattention

AND EITHER

3. Disorganised thinking/ incoherent speech

OR

4. Altered level of consciousness

Other features

- Memory impairment
- Disorientation to time, place or person
- Agitation e.g. the patient is repeatedly pulling at her sheets and IV tubing
- Retardation
- Visual or auditory misinterpretations, illusions, or hallucinations
- Change in sleep wake cycle e.g. excessive daytime sleepiness with insomnia at night

Three types of delirium

- Hyperactive — symptoms of agitation, increased vigilance, and often concomitant hallucinations
- Hypoactive — lethargy and reduced psychomotor functioning, the more common form in older patients. often goes unrecognized and carries an overall poorer prognosis.
- Mixed — patients can fluctuate between the hypoactive and hyperactive forms

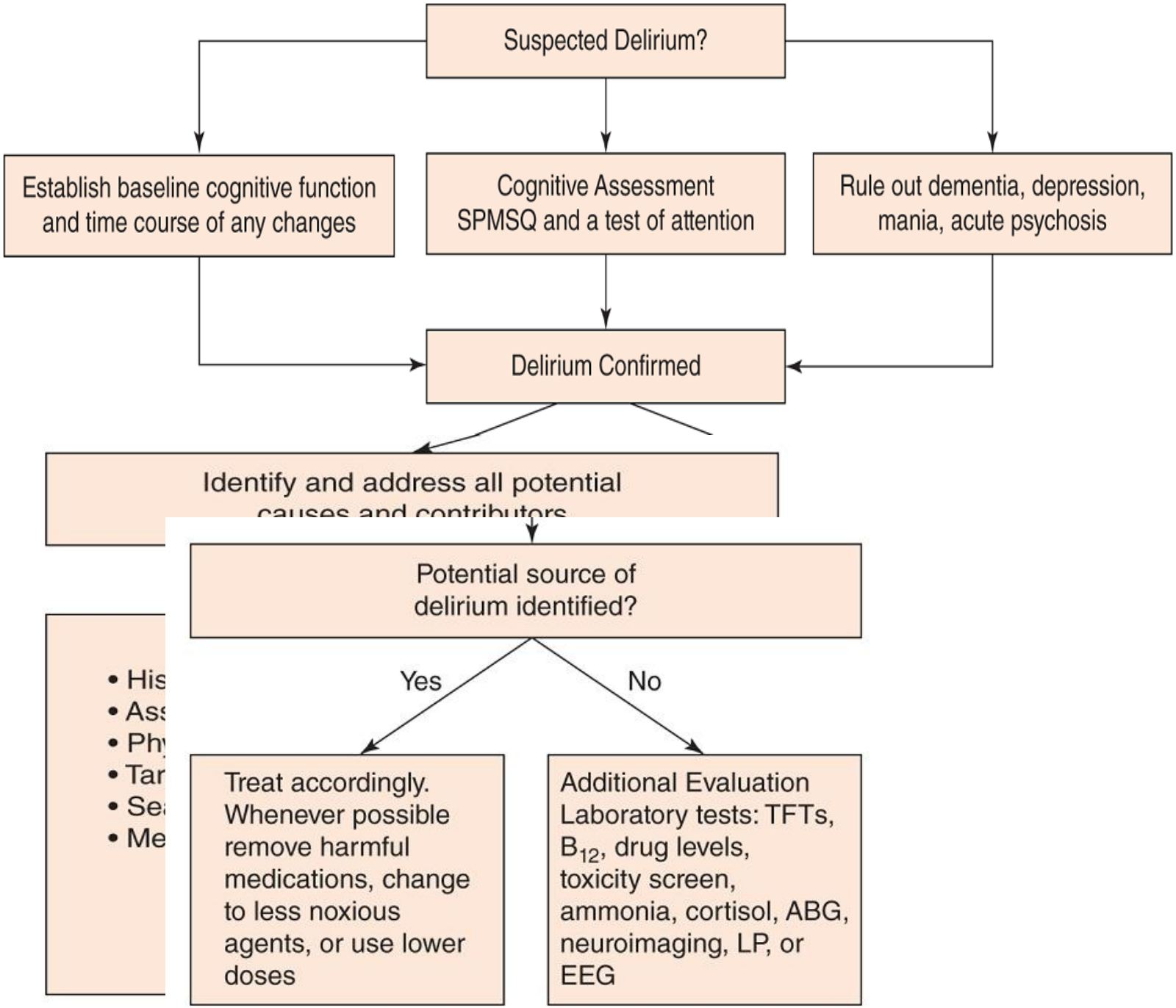
Prognosis

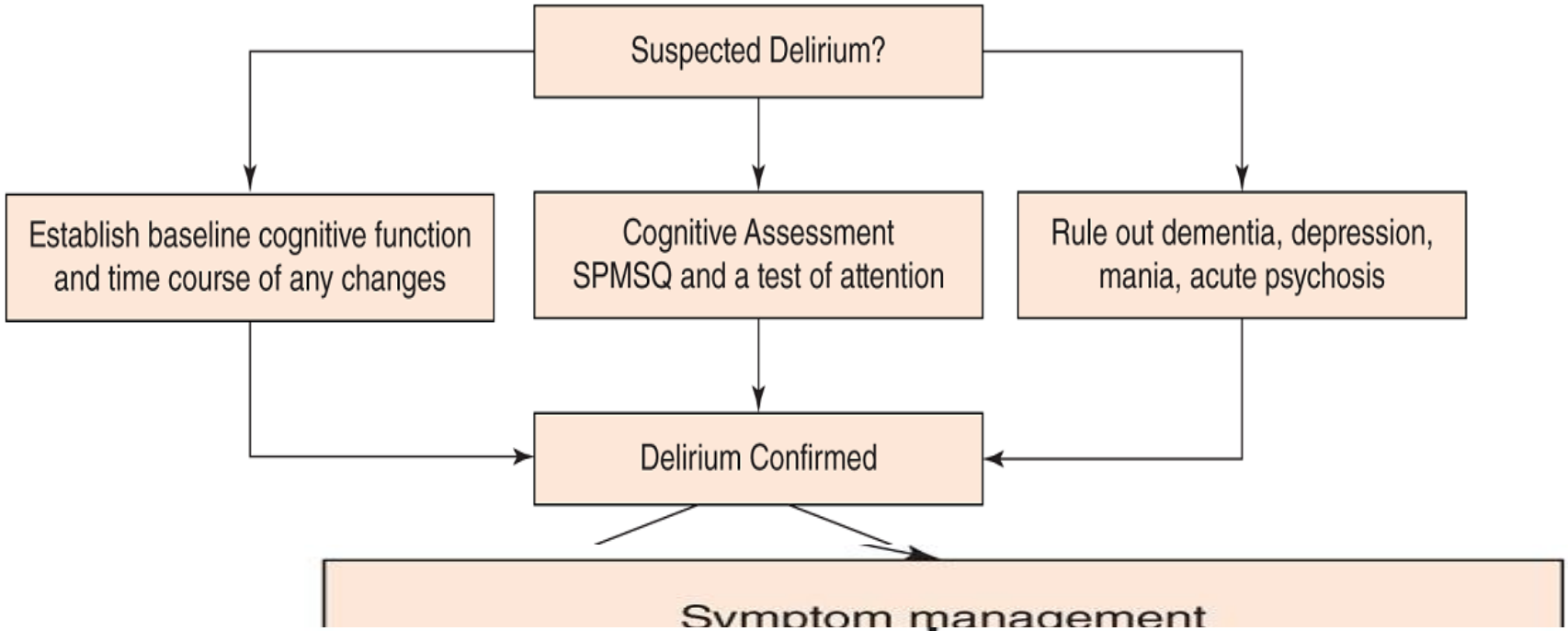
- increased mortality,
- increased rates of nursing home placement,
- functional and cognitive decline

EVALUATION

- establishing the diagnosis of delirium;
- determining the potential cause(s) and ruling out life-threatening contributors;
- managing the symptoms while assuring patient safety

Algorithm for the Evaluation of Altered Mental Status


Suspected Delirium?
Establish baseline cognitive function and time course of any changes
Cognitive Assessment SPMSQ and a test of attention
Rule out dementia, depression, mania, acute psychosis
Delirium Confirmed
Identify and address all potential
Potential source of delirium identified?
Yes
No
Treat accordingly. Whenever possible remove harmful medications, change to less noxious agents, or use lower doses
Additional Evaluation Laboratory tests: TFTs, B_{12}, drug levels, toxicity screen, ammonia, cortisol, ABG, neuroimaging, LP, or EEG



Pharmacologic Management

Use ***only*** in severely agitated patient at risk of:

- interruption of essential medical care
- posing safety hazard for themselves or staff

Treatment: Haloperidol 0.25-1 mg PO/IM

May repeat every 20–30 minutes, maximum 3–5 mg/24 hours
Maintenance dose = 50% loading dose given divided over 24 hours, then taper

Avoid benzodiazepines and other psychoactive drugs

How is it prevented?

RISK FACTOR	INTERVENTION PROTOCOL
Vision impairment	➢Provision of vision aids (eg, magnifiers, special lighting) ➢Provision of adaptive equipment (eg, illuminated phone dials, large-print books)
Hearing impairment	➢Provision of amplifying devices; repair hearing aids ➢Instruct staff in communication methods
Dehydration	➢Early recognition and volume repletion
Psychoactive medications	➢Restricted use of PRN sleep and psychoactive medications (eg, sedative-hypnotics, narcotics, anticholinergic drugs) ➢Nonpharmacologic protocols for management of sleep and anxiety
Sleep deprivation	➢Noise-reduction strategies ➢Scheduling of nighttime medications, procedures, and nursing activities to allow uninterrupted period of sleep

PREVENTIVE INTERVENTIONS AFTER HIP FRACTURE

RISK FACTOR	INTERVENTION
Hypoxia	Supplemental oxygen Raise systolic blood pressure Transfusion to hematocrit > 30%
Fluid/electrolyte imbalance	Restore serum sodium, potassium, glucose Treat fluid overload or dehydration
Pain	Around-the-clock acetaminophen Low-dose morphine, oxycodone for breakthrough pain
Psychoactive medications	Minimize benzodiazepines, anticholinergics, antihistamines Eliminate drug interactions and redundancies
Bowel/bladder dysfunction	Treat constipation Discontinue urinary catheter by postoperative day 2, screen for retention or incontinence
Poor nutrition	Provide dentures, assistance Supplements or enteral nutrition

PREVENTIVE INTERVENTIONS AFTER HIP FRACTURE

RISK FACTOR	INTERVENTION
Immobilization	Early mobilization (out of bed postoperative day 1) Physical therapy
Postoperative complications	Monitor and treat for: Myocardial ischemia Atrial arrhythmias Pneumonia Pulmonary embolus Urinary tract infection
Sensory deprivation	Use glasses and hearing aids Provide clock and calendar Provide radio and soft lighting
Treatment of agitation	Diagnostic work-up Reassurance, family presence, sitter If pharmacologic management necessary, use haloperidol

How is it treated?

- pharmacologic Management
  - in whom delirium symptoms would result in interruption of needed medical therapies (eg, mechanical ventilation, central lines)
  - may endanger the safety of the patient or other persons.
  - sedative drugs may prolong delirium and worsen clinical outcomes
  - should be initiated at the lowest starting dose for the shortest time possible
- Nonpharmacologic Management

Antipsychotics

- the preferred agents of treatment
- haloperidol being the agent in most widespread use available in parenteral form and is associated with less postural blood pressure changes and fewer anticholinergic side effects
- compared with thioridazine higher rate of extrapyramidal side effects and acute dystonias
- Parenteral administration is required in cases where rapid onset of action is required with short duration of action, whereas oral or intramuscular use is associated with a more optimal duration of action.

haloperidol

- 0.25 to 0.5 mg of haloperidol orally or parenterally
- may be repeated every 30 minutes after the vital signs have been rechecked and until sedation has been reached.
- start low and go slow
- A subsequent maintenance dose consisting of one-half of the loading dose should be administered in divided doses over the next 24 hours, with doses tapered over the ensuing 48 hours as the agitation resolves

Other Pharmacologic Approaches

- Benzodiazepines (eg, lorazepam) are not recommended as first-line agents
- The treatment of choice for delirium caused by seizures and alcohol- and medication-related withdrawal syndromes
- newer atypical antipsychotic agents, procholinergic agents (such as donepezil), serotonin receptor antagonists (such as trazodone), α2 -agonists (clonidine), and sedatives (such as dexmedetomidine)
- their use **be restricted** to patients with severe agitation that poses a threat to their safety.

Nonpharmacologic Management

- strategies for reorientation and behavioral intervention, such as ensuring the **presence of family members**, use of sitters, and transferring a disruptive patient to a private room or closer to the nurse's station for increased supervision
- calendars, clocks, and the day's schedule should be prominently displayed, along with familiar personal objects from the patient's home environment (eg, photographs and religious artifacts)

Nonpharmacologic Management

- Personal contact and communication are critical to reinforce patient awareness and encourage patient participation as much as possible.

- repeated reorientation , frequent eye contact.
- Correction of sensory impairments (ie, vision and hearing
- Mobility and independence
- physical restraints should be avoided because they lead to decreased mobility, increased agitation, and greater risk of injury and worsening delirium.
- Patient involvement in self-care and decision making should also be encouraged.
- limiting room and staff changes
- low-level lighting at night.
- decreased noise
- for sleep at night is of crucial importance in the management of delirium. This may require unit-wide changes in the coordination and scheduling of nursing and medical procedures, including medication dispensing, vital sign recording, and administration of intravenous medications and other treatments.
- Hospital-wide changes may be needed to ensure a low level of noise at night, including minimizing hallway noise, overhead paging, and staff conversations.

Nonpharmacologic Sleep Protocol

- effective for management of agitation in delirious patients and for prevention of delirium through minimization of psychoactive medications.

- The nonpharmacologic sleep protocol includes three components:
- (1) a glass of warm milk or herbal tea,
- (2) relaxation music or tapes,
- (3)back massage.

- Use of the protocol reduced the use of sleeping medications from 54% to 31% ($p < 0.002$) in a hospital environment.


thanks