MOUNT SINAI HOSPITAL
Joseph and Wolf Lebovic Health Complex

Geriatric Delirium in the ED: Recognition, Prevention, Management

Don Melady, MD
Lesley Wiesenfeld, MD
Carla Loftus, BScN

Objectives

1. To increase our knowledge of geriatric delirium

2. To increase awareness of geriatric delirium as an unmet challenge in our department

3. To introduce strategies for improved management

4. To build a collaborative team with a common language and approach

MOUNT SINAI HOSPITAL
Joseph and Wolf Lebovic Health Complex

1. Increasing our knowledge of geriatric delirium

MOUNT SINAI HOSPITAL
Joseph and Wolf Lebovic Health Complex

What is delirium?

- “lira” – Latin for “furrow”
- “delirare” means “to jump out of the furrow while ploughing”

MOUNT SINAI HOSPITAL
Joseph and Wolf Lebovic Health Complex

DSM-IV diagnosis

An acute confusional state characterized by

- Sudden onset
- Fluctuating course
- Inattention and easy distractability
- Disorganized thinking *OR* decreased level of awareness
- A medical or pharmacological cause

What delirium is not

- Agitation
- Autonomic instability
- Mania or depression
- Dementia or cognitive impairment
- Normal

The pathophysiology of delirium is poorly understood

- A change (usually a decrease) in brain metabolic activity
- A loss of regulation of neurotransmitter synthesis and conduction
- Involves especially a loss of acetylcholine homeostasis
- Usually increased dopaminergic and serotonergic activity
- Some inflammatory mechanisms (increased cytokines/interleukins) involved
- Activation of the sympathetic nervous system

Nearly any change in brain milieu can be causative:

- Decreased O2
- Temperature changes
- Increased glucose or any other biochemical changes
- Hormonal changes (thyroid, insulin, cortisol)
- Psychoactive medications (remember that ALL medications are psychoactive in the elderly)

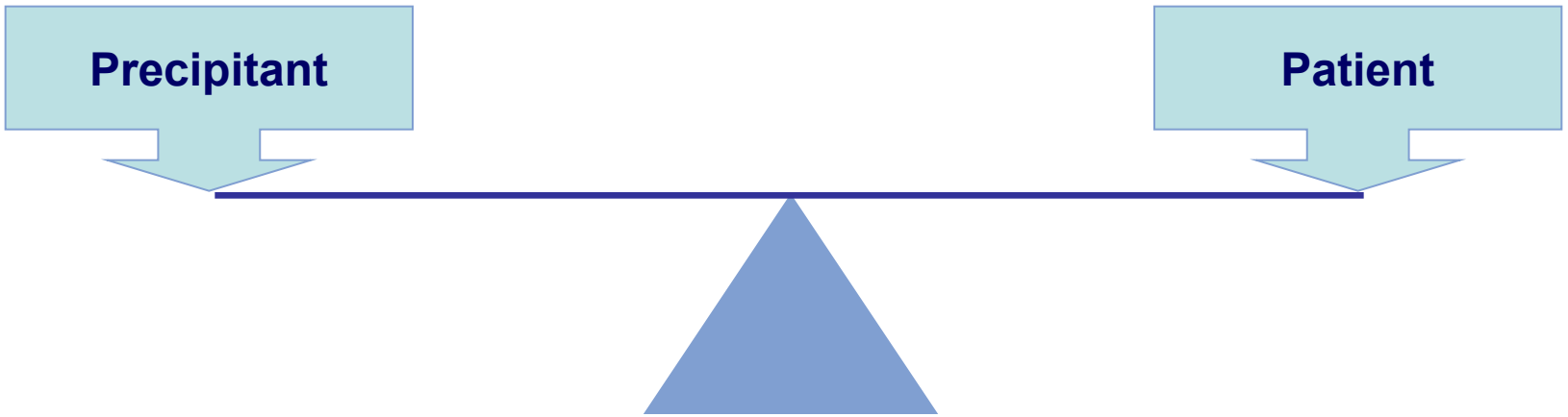
Lesley's IN/OUT approach

Four Categories:

- IN the brain (stroke, meningitis, ICP)
- OUT of the brain (endocrine, sepsis, metabolic)
- Drugs IN (opiates, anticholinergics, steroids, any)
- Drugs OUT (withdrawal: alcohol, sedative, SSRI)

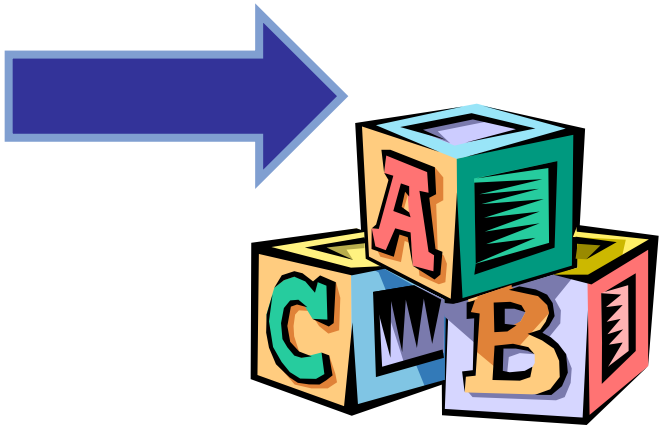
There is an intrinsic increased risk in the elderly

- Reduced homeostatic regulation
- Drug metabolism changes
- Possibly already impaired brain from a pre-existing dementia or other brain injury (post-CVA)

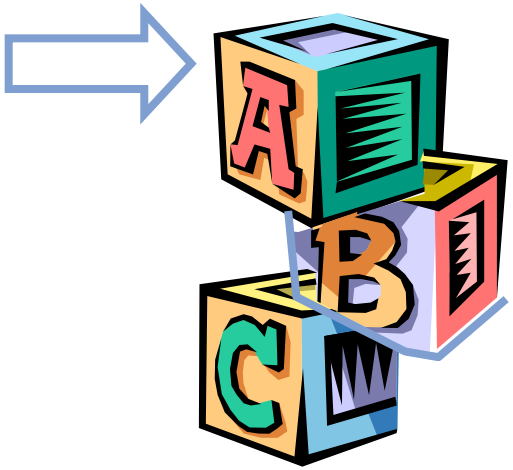


Inouye Delirium Model - What causes delirium?

- For a fit 65 y.o. who plays seniors hockey
- A strong or repeated precipitant will be needed



- For a frail 89 y.o. with baseline dementia
- Only a minimal precipitant will be needed



MOUNT SINAI HOSPITAL
Joseph and Wolf Lebovic Health Complex

How to make the diagnosis?

- Satisfy all the DSM-IV criteria

Confusion Assessment Method (CAM)
(Sharon Inouye, 1990)

To make the diagnosis: Features 1 and 2 must both be present
plus one or both of 3 and 4

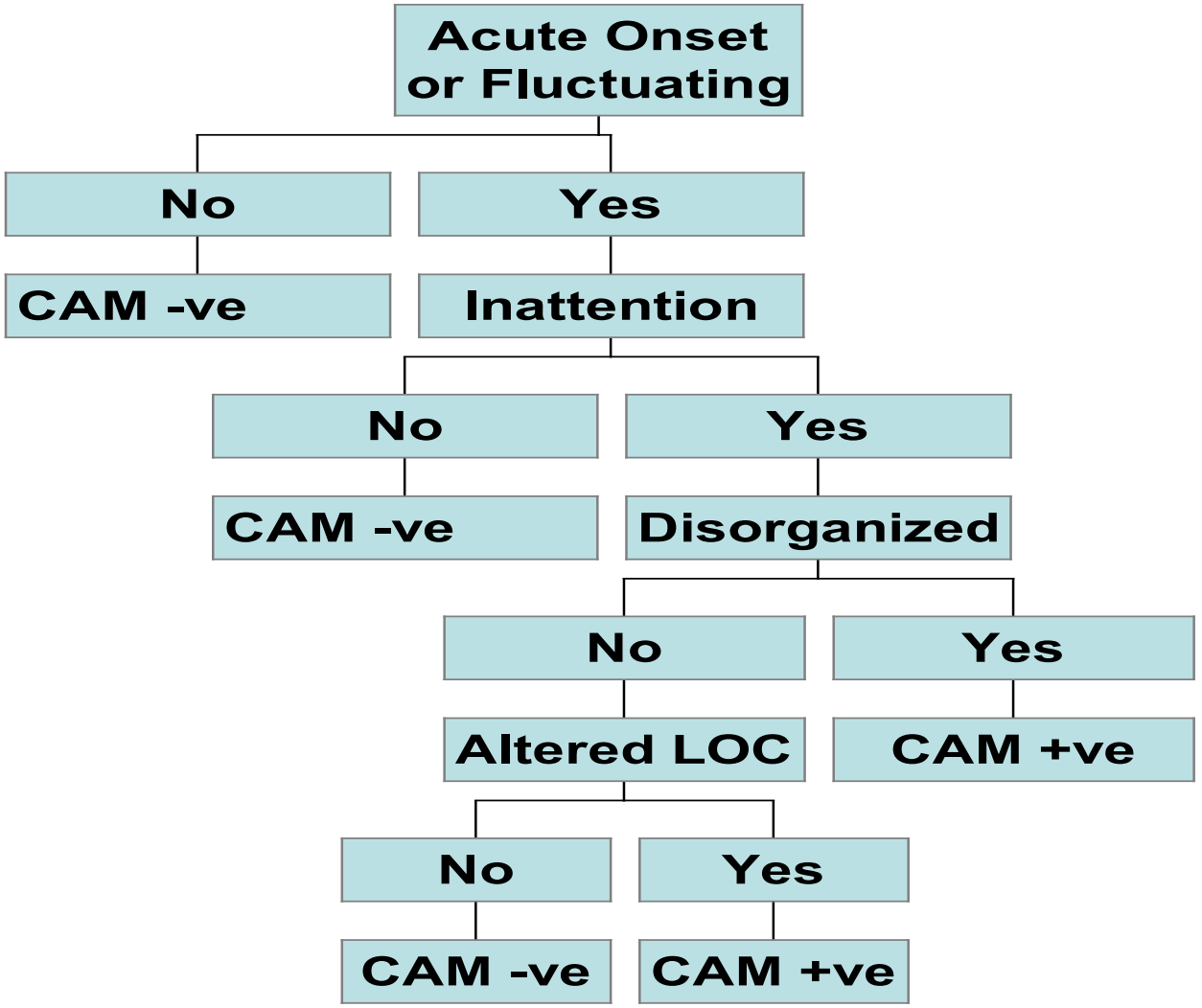
Feature 1: Acute onset *AND* fluctuating course (change from baseline, change during the day)

Feature 2: Inattention
(difficulty focussing, keeping track)

Feature 3: Disorganized thinking
(incoherent, rambling, illogical, circumstantial)

Feature 4: Altered level of consciousness
(lethargic, vigilant, stuporous)

Confusion Assessment Method



MOUNT SINAI HOSPITAL
Joseph and Wolf Lebovic Health Complex

Confusion Assessment Method

- In ED: 86% Sensitive and 100% Specific (using the DSM IV criteria as a gold standard)

- Inter-rater agreement excellent (K = 0.91)

MOUNT SINAI HOSPITAL
Joseph and Wolf Lebovic Health Complex

2. Increasing our awareness of geriatric delirium as an unmet challenge in our department

How are we doing?

- Remarkable lack of literature on delirium in the geriatric emergency department population
- However the five articles in the past ten years show a remarkable amount of concordance

Lewis et al., Am J Emerg Medicine, 1995:

- 385 ED patients of whom 38 (10%) had diagnosis of delirium based on the CAM
- 22 were admitted mostly with an infectious diagnosis; 16 were discharged with various diagnoses and no mention of mental status
- The 3-month mortality in the discharged delirious group was 14% vs 8% in a matched non-delirious group

Elie et al., CMAJ, 2000

Study based at St. Mary's Hospital, Montreal
(a site similar to MSH)

- 447 non-critically ill ED patients screened by a psychiatrist
- 43 (9.6%) were diagnosed with delirium on screening
- The sensitivity of detection by EP was 35% though specificity was 98.5%
- 30% of the delirious patients were discharged

MOUNT SINAI HOSPITAL
Joseph and Wolf Lebovic Health Complex

Hustey, Ann Emerg Med, 2002 and 2003

Two studies based at the Cleveland Clinic
(a site similar to MSH)

1. 297 patients, >70 years, mostly from home, critically ill excluded; 30 (10%) with delirium based on CAM; 11 of those 30 were discharged home with no documentation of mental status or follow up
2. 271 patients; 19 (7%) with delirium based on CAM; 5 were discharged home with 4 of them re-admitted within 3 days

Kakuma, JAGS, 2003

Study was based at the Jewish General and Montreal General Hospitals

(a site similar to MSH)

- 1268 patients (critically ill excluded); 107 (8%) with delirium of whom 30 were discharged home
- 31% 6-month mortality in the undetected group vs. 12% in a matched detected group

So how are we doing?

Maybe not as well as we think we are

Common threads in these five studies:

- About 10% of all older ED patients have delirium
- We detect about two-thirds of those delirious patients
- The other one-third does much worse with increased re-admissions, increased morbidity and increased mortality

Why are we not doing better?

- We don't think about the time course ("What has changed?")
- We usually have a static snapshot of a condition that is by definition fluctuating
- We probably under-estimate the severity of the condition and its consequences
- We believe delirium always means agitation
- We rarely use formal assessment methods
- The diagnosis overlaps with dementia and depression
- The presentations are almost always atypical

3. Introducing strategies for improved management

MOUNT SINAI HOSPITAL
Joseph and Wolf Lebovic Health Complex

We can prevent some delirium

We can ameliorate much delirium with a few low-tech interventions

- Promote/permit nutrition and hydration
- Promote mobility
- Promote a normal sleep-wake cycle
- Promote orientation
- Promote normal bowel and bladder function
- Promote normal sensory stimulation
- Manage pain while minimizing sedation
- Treat the symptoms of delirium

Treatment of Delirium

The treatment of delirium is the identification and treatment of the underlying cause while maintaining safety and comfort

Management of Agitation Associated with Delirium

- Mainstay Typical Neuroleptic is Haloperidol
  - It is high potency so it carries a low anticholinergic burden BUT has a higher risk of EPS

    (may wish to avoid in Parkinsonism patients)
  - It has the benefit of availability in oral and parenteral forms
- Initiate 0.5-2.5 mg IM/IV in elderly patients q30-60 minutes until agitation managed for stat or prn situations
- To achieve the same therapeutic effect, the oral dose should be 1.5 times higher than the parenteral dose
- 0.5-2.0 mg po q4-6 h will often suffice in delirium

4. Building a collaborative team with a common language and approach

MOUNT SINAI HOSPITAL
Joseph and Wolf Lebovic Health Complex

- Team members – MD, RN, GEM, Pharmacist, SW, Rehab, LTCH staff, family members, nutrition
- New language -- “what has changed?”, “inattention”, “CAM”
- Benefits of heightened awareness -- fewer re-admissions, less time-consuming care, shorter in-hospital stays, a sense of accomplishment

Thanks

- Lesley Wiesenfeld, MSH
- Jacques Lee, Sunnybrook
- MSH Geriatric Steering Committee

MOUNT SINAI HOSPITAL
Joseph and Wolf Lebovic Health Complex

References

1 Lewis LM, Miller DK, Morley JE, Nork MJ, Lasater LC. Unrecognized delirium in ED geriatric patients. Am J Emerg Med. 1995 Mar;13(2):142-5.

2 Naughton BJ, Moran MB, Kadah H, Heman-Ackah Y, Longano J. Delirium and other cognitive impairment in older adults in an emergency department. Ann Emerg Med. 1995 Jun;25(6):751-5.

3 Elie M, Rousseau F, Cole M, Primeau F, McCusker J, Bellavance F. Prevalence and detection of delirium in elderly emergency department patients. CMAJ, 2000;163:977-981.

4 Kakuma R, duFort GG, Arsenault L, Perrault A, Platt RW.

Monette J, Moride Y,Wolfson C. Delirium in older Emergency Department patients discharged hom: Effect on survival. JAGS.2003;51:443-350.

References

5 Hustey FM, Meldon SW, Smith MD, Lex CK. The effect of mental status screening on the care of elderly emergency department patients. Ann Emerg Med. 2003;41(5):678-84.

6 Hustey, FM, Meldon, SW. The prevalence and documentation of impaired mental status in elderly emergency department patients. Ann Emerg Med. 2002;39(3):248-253.

7 Inouye SK, Viscoli CM, Horwitz RI, Hurst LD, Tinetti ME. A predictive model for delirium in hospitalized elderly medical patients based on admission characteristics. Ann Int Med. 1993 Sept 15; 119(6):474-81

8 Inouye, S. Delirium in Older Persons. NEJM, 2006;354(11):1157-65

References

9 Monette J, Gaulbald du Fort G, Fung SH, et al. Confusion assessment method (CAM) as a screening tool for delirium in the emergency room. Gen Hosp Psych, 2001;23(1):20-25.

10 Wiesenfeld L. Practical tips for treating delirium from a consultant geriatric psychiatrist in the trenches. Geriatrics. 2008;63(5):28-31