

Delirium and Dementia in Acute Care

Megan Walsh, CRNP, PMHNP-BC

Bloomsburg University

Geisinger Health System

Villanova University

Disclosures

- Nothing to disclose

Objectives

- o Understand the differences between dementia and delirium
- o Discuss non-pharmacologic management strategies for dementia and delirium
- o Understand the risks and benefits associated with using psychotropic medications to treat dementia and delirium

Delirium

- o “A confused mental state that causes changes in awareness and behavior and may come and go during the day. A person with delirium may also have problems with attention, thinking and memory, hallucinations, emotion, judgement, muscle control, sleep and waking” (NIH, n.d.)

Delirium

- Represents a stark change from baseline
- Related to a physiologic disturbance
 - Infection
 - Trauma
 - Hypoxia
 - Stressors on body
- Time and course are unpredictable

Two Types of Delirium

- o Hypoactive
 - o Clinicians tend to miss this sub-type of delirium as patient is usually quiet and intermittently sleeping throughout the day
- o Hyperactive
 - o More “classic” picture of delirium
 - o Often some behavioral disturbances present

Delirium

Diagnostic Criteria

- A. A disturbance in attention (i.e., reduced ability to direct, focus, sustain, and shift attention) and awareness (reduced orientation to the environment).
- B. The disturbance develops over a short period of time (usually hours to a few days), represents a change from baseline attention and awareness, and tends to fluctuate in severity during the course of a day.
- C. An additional disturbance in cognition (e.g., memory deficit, disorientation, language, visuospatial ability, or perception).
- D. The disturbances in Criteria A and C are not better explained by another preexisting, established, or evolving neurocognitive disorder and do not occur in the context of a severely reduced level of arousal, such as coma.
- E. There is evidence from the history, physical examination, or laboratory findings that the disturbance is a direct physiological consequence of another medical condition, substance intoxication or withdrawal (i.e., due to a drug of abuse or to a medication), or exposure to a toxin, or is due to multiple etiologies.

(APA, 2013)

Delirium

- o Characteristics:
 - o Abrupt or sudden onset
 - o Disturbance in orientation/awareness
 - o **Disturbance in attention**
 - o Sleep-wake disturbance
 - o Disturbance in cognition (memory, language, visuospatial perception)
 - o Behavioral Disturbances
 - o Hallucinations

(APA, 2013)

Delirium

- o “Acute brain failure”
- o Less cognitive reserve increases likelihood of its occurrence
- o Experiencing delirium linked with:
 - o Fatalities
 - o Irreversible cognitive impairment
 - o Contributing to development of dementia

o (Inouye et al., 2014)

Delirium

- o Most serious and frequent complication in hospitalized older adults
- o Delirium is present in
 - o 29-64% of patients older than 65 in general (non-ICU) hospitalized units
 - o 19-82% of older adults in ICU
 - o 8-17% of community dwelling seniors present to the ED with delirium
 - o 40% of nursing home residents present to the ED with delirium

(Saczynski & Inouye, 2015)

Delirium and Outcomes

- o 2014 Literature Review by Inouye and colleagues identified the following common outcomes:
 - o Functional decline
 - o Longer LOS
 - o Falls
 - o Nursing Home/Institutional Placement
 - o Death

Diagnosing Delirium

- o Clinical diagnosis
- o Often missed by providers (Inouye et al., 2014)
- o Study by Han et al., (2009) found that 76% of delirium cases were missed by ER physicians and that increased the likelihood that this would also be missed by hospitalists on admission

Diagnosing Delirium

- o EEG
 - o Can show diffuse slowing in delirium
- o Other laboratory studies are of little clinical benefit in confirming delirium
 - o Although, they may assist clinicians in identifying the causative agent of delirium

(Saczynski & Inouye, 2015)

Diagnosing Delirium

- o Can use screening instruments
- o Adamis et al (2010) identified and reviewed 24 scales that were in existence to identify delirium
- o Found that CAM, DRS, MDAS, and NEECHAM were the most robust in terms of undergoing rigorous psychometric testing

Confusion Assessment Method (CAM)

- o Developed in 1990 by Inouye and colleagues
- o Based on DSM-III criteria for delirium
- o Designed to be completed in less than 5 minutes
- o Has progressed to have a specialized version specific to the ICU (CAM-ICU)

CAM

Appendix Table 1. *The Confusion Assessment Method Instrument*

Acute onset

1. Is there evidence of an acute change in mental status from the patient's baseline?

Inattention*

2. A. Did the patient have difficulty focusing attention, for example, being easily distractible, or having difficulty keeping track of what was being said?

Not present at any time during interview.

Present at some time during interview, but in mild form.

Present at some time during interview, in marked form.

Uncertain.

- B. (If present or abnormal) Did this behavior fluctuate during the interview, that is, tend to come and go or increase and decrease in severity?

Yes.

No.

Uncertain

Not applicable.

- C. (If present or abnormal) Please describe this behavior:

Disorganized thinking

3. Was the patient's thinking disorganized or incoherent, such as rambling or irrelevant conversation, unclear or illogical flow of ideas, or unpredictable switching from subject to subject?

Altered level of consciousness

4. Overall, how would you rate this patient's level of consciousness?

Alert (normal).

Vigilant (hyperalert, overly sensitive to environmental stimuli, startled very easily).

Lethargic (drowsy, easily aroused).

Stupor (difficult to arouse).

Coma (unarousable).

Uncertain.

CAM

Disorientation

5. Was the patient disoriented at any time during the interview, such as thinking that he or she was somewhere other than the hospital, using the wrong bed, or misjudging the time of day?

Memory impairment

6. Did the patient demonstrate any memory problems during the interview, such as inability to remember events in the hospital or difficulty remembering instructions?

Perceptual disturbances

7. Did the patient have any evidence of perceptual disturbances, for example, hallucinations, illusions, or misinterpretations (such as thinking something was moving when it was not)?

Psychomotor agitation

8. Part 1.

At any time during the interview, did the patient have an unusually increased level of motor activity, such as restlessness, picking at bedclothes, tapping fingers, or making frequent sudden changes of position?

Psychomotor retardation

8. Part 2.

At any time during the interview, did the patient have an unusually decreased level of motor activity, such as sluggishness, staring into space, staying in one position for a long time, or moving very slowly?

Altered sleep-wake cycle

9. Did the patient have evidence of disturbance of the sleep-wake cycle, such as excessive daytime sleepiness with insomnia at night?

CAM

- Has been used in about 227 studies as of 2010
- Requires some basic training in order to successfully use the scale
- Has been validated for use with strong specificity and sensitivity (89% and 94% respectively) and high interrater reliability

◦ (Han et al., 2010; Saczynski & Inouye, 2015)

CAM

- o Addresses the 4 main domains of delirium
 - o Acute Onset/Fluctuating Course
 - o Inattention
 - o Disorganization
 - o Altered level of consciousness

o (Inouye et al., 1990)

Why Not Just Use MMSE?

- o MMSE or Mini-Mental Status Exam test cognitive function
- o This is not specific to delirium
- o Scores on MMSE can be low in delirium but may also be low in dementia
- o MMSE does not help differentiate delirium from other cognitive impairment

o (Han et al., 2010)

Dementia

- Umbrella term to describe a cluster of symptoms with a number of etiological causes
 - Many subtypes
- Interferes with independent functioning
- Prevalence increases with age

(Kimchi & Lyketsos, 2015)

Major Neurocognitive Disorder

Diagnostic Criteria

- A. Evidence of significant cognitive decline from a previous level of performance in one or more cognitive domains (complex attention, executive function, learning and memory, language, perceptual-motor, or social cognition) based on:
 - 1. Concern of the individual, a knowledgeable informant, or the clinician that there has been a significant decline in cognitive function; and
 - 2. A substantial impairment in cognitive performance, preferably documented by standardized neuropsychological testing or, in its absence, another quantified clinical assessment.
- B. The cognitive deficits interfere with independence in everyday activities (i.e., at a minimum, requiring assistance with complex instrumental activities of daily living such as paying bills or managing medications).
- C. The cognitive deficits do not occur exclusively in the context of a delirium.
- D. The cognitive deficits are not better explained by another mental disorder (e.g., major depressive disorder, schizophrenia).

Dementia

- o 2010 estimates listed 35.6 million individuals with dementia
- o By 2050 it is predicted that 115.4 million people worldwide will have dementia
- o Estimated \$203 billion dollars spent on caring for individuals with dementia in 2013

Lyketsos, 2015)

(Kimchi &

Features of Dementia

- o Global cognitive impairment
 - o Attention
 - o Executive function
 - o Learning/memory
 - o Language
 - o Motor
 - o Social
- o Results in impaired functioning that is a deterioration from baseline
- o Evident in ADLs

Psychiatry and Dementia

- o Often psychiatry is involved due to presence of neuropsychiatric symptoms
 - o Affective
 - o Motivational
 - o Psychosis
 - o Disturbances in “basic drives” (sleep, sex, eating)
 - o Disinhibited or socially inappropriate behaviors

o (Kimchi & Lyketsos, 2015)

Diagnosing Dementia


- o Thorough History
 - o Likely need to involve family/loved ones for collateral
 - o Looking for progressive as opposed to abrupt cognitive decline
- o Cognitive Assessment
- o Combined thorough assessment and cognitive assessment can prevent unnecessary referrals to neuropsychologists
 - o Reserve specialists for specific questions or difficult cases

MMSE

Mini-Mental State Examination (MMSE)

Patient's Name: _____ Date: _____

Instructions: Score one point for each correct response within each question or activity.

Maximum Score	Patient's Score	Questions
5		"What is the year? Season? Date? Day? Month?"
5		"Where are we now? State? County? Town/city? Hospital? Floor?"
3		The examiner names three unrelated objects clearly and slowly, then the instructor asks the patient to name all three of them. The patient's response is used for scoring. The examiner repeats them until patient learns all of them, if possible.
5		"I would like you to count backward from 100 by sevens." (93, 86, 79, 72, 65, ...) Alternative: "Spell WORLD backwards." (D-L-R-O-W)
3		"Earlier I told you the names of three things. Can you tell me what those were?"
2		Show the patient two simple objects, such as a safetypin and a pencil, and ask the patient to name them.
1		"Repeat the phrase: 'No ifs, ands, or buts.'"
3		"Take the paper in your right hand, fold it in half, and put it on the floor." (The examiner gives the patient a piece of blank paper.)
1		"Please read this and do what it says." (Written instruction is "Close your eyes.")
1		"Make up and write a sentence about anything." (This sentence must contain a noun and a verb.)
1		"Please copy this picture." (The examiner gives the patient a blank piece of paper and asks him/her to draw the symbol below. All 10 angles must be present and two must intersect.) 
30		TOTAL

(Folstein, Folstein, & McHugh, 1975)

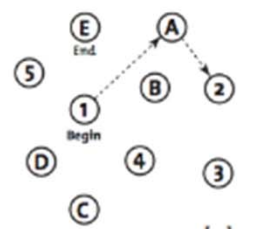

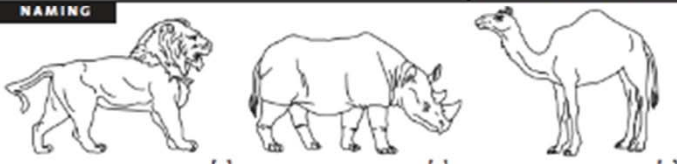
Issues with MMSE

- Does not identify mild cognitive impairment
- Biases toward well educated
- Relies heavily on orientation questions

(Kimchi & Lysetkos, 2015)

MoCA

NAME : _____
 Education : _____ Date of birth : _____
 Sex : _____ DATE : _____

VISUOSPATIAL / EXECUTIVE		Copy cube	Draw CLOCK (Ten past eleven) (5 points)	POINTS																			
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																			
<div style="display: flex; justify-content: space-around;"> [] [] </div>		<div style="display: flex; justify-content: space-around;"> [] [] [] </div>	<div style="display: flex; justify-content: space-around;"> [] [] [] </div>	___/5																			
NAMING																							
																							
<div style="display: flex; justify-content: space-around;"> [] [] [] </div>																							
MEMORY																							
Read list of words, subject must repeat them. Do 2 trials. Do a recall after 5 minutes.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px;"></td> <td style="width: 100px;">FACE</td> <td style="width: 100px;">VELVET</td> <td style="width: 100px;">CHURCH</td> <td style="width: 100px;">DAISY</td> <td style="width: 100px;">RED</td> </tr> <tr> <td style="text-align: center;">1st trial</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">2nd trial</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		FACE	VELVET	CHURCH	DAISY	RED	1st trial						2nd trial									No points
	FACE	VELVET	CHURCH	DAISY	RED																		
1st trial																							
2nd trial																							
ATTENTION																							
Read list of digits (1 digit/sec). Subject has to repeat them in the forward order.		Subject has to repeat them in the backward order.			<input type="checkbox"/> 2 1 8 5 4 <input type="checkbox"/> 7 4 2																		
Read list of letters. The subject must tap with his hand on each letter A. No points if a 2 errors.																							
<input type="checkbox"/> FBACMNAAJKLBFAKDEAAAJAMOFAB																							
Serial 7 subtraction starting at 100																							
<input type="checkbox"/> 93	<input type="checkbox"/> 86	<input type="checkbox"/> 79	<input type="checkbox"/> 72	<input type="checkbox"/> 65	___/3																		
4 or 5 correct subtractions: 3 pts, 3 or 4 correct: 2 pts, 2 correct: 1 pt, 0 correct: 0 pt																							

MoCA

LANGUAGE	Repeat : I only know that John is the one to help today. [] The cat always hid under the couch when dogs were in the room. []					___/2		
	Fluency / Name maximum number of words in one minute that begin with the letter F [] ____ (N ≥ 11 words)					___/1		
ABSTRACTION	Similarity between e.g. banana - orange = fruit [] train - bicycle [] watch - ruler					___/2		
DELAYED RECALL	Has to recall words WITH NO CUE	FACE []	VELVET []	CHURCH []	DAISY []	RED []	Points for UNCUED recall only	___/5
Optional	Category cue							
	Multiple choice cue							
ORIENTATION	[] Date	[] Month	[] Year	[] Day	[] Place	[] City	___/6	
© Z.Nasreddine MD Version November 7, 2004					Normal ≥ 26 / 30	TOTAL	___/30	
www.mocatest.org					Add 1 point if ≤ 12 yr edu			

MoCA

- Incorporates clock drawing which tests executive functioning
- Tests a larger number of the components of cognition as compared to the MMSE

Delirium and Dementia

- o Having dementia is a risk factor for developing delirium
- o Having delirium is a risk factor for developing dementia or worsening dementia progression
- o They can overlap (delirium superimposed on dementia)

o (Fong et al., 2015)

Differentiating Delirium and Dementia

- o Often will need collateral information
- o Look at any previous diagnoses of dementia or a progressive decline
- o Look at nature of confusion—abrupt vs progressive
- o Waxing and waning pattern
- o Inattention

Treating Delirium

- o Most important:
 - o TREAT WHATEVER IS CAUSING THE DELIRIUM
 - o Provide supportive care during medical treatment

Treating Delirium

- o Address areas where disturbance could precipitate or exacerbate delirium:
 - o Sleep
 - o Sensory perception
 - o Pain
 - o Medications
 - o Look carefully at medication regimen and try to trim this down and/or use medications that are not going to exacerbate delirium

(Kimchi & Lysetkos, 2015)

Non-Pharmacologic Approaches to Delirium

- o All members of the health care team need to be actively involved in using non-pharmacologic approaches as these are often continuous
- o Need to allow for tincture of time
 - o Course of delirium and time it takes until delirium clears despite correction of underlying medical condition is variable

Non-Pharmacologic Approaches to Delirium

- o Address sensory impairment
 - o Make sure client has accessory devices to help with sight/hearing
 - o Use translators if needed
 - o Promote use of adequate light (during daytime hours)

(Kimchi & Lysetkos, 2015)

Non-Pharmacologic Approaches to Delirium

- o Reorientation/redirection
 - o Try to engage family or loved ones of the patient in this process as much as possible
 - o Frequent if not constant supervision for safety and reorientation
- o Regularly communicate with the client
 - o Even if confused, you can still communicate regularly
 - o This can help to foster ability to redirect

(Kimchi & Lysetkos, 2015)

Non-Pharmacologic Approaches to Delirium

- o Sleep is essential
- o Promote sleep
 - o Sleep schedule
 - o Relaxation
 - o Incorporate music/massage
 - o Bright lights during day/low light at night
 - o Engage in activities during day as able to discourage napping
 - o Quiet room at night
 - o Try to avoid waking patient in middle of the night

(Kimchi & Lysetkos, 2015)

Non-Pharmacologic Approaches to Delirium

- o Keep the patient mobile
 - o Ambulate during the day
 - o Avoid use of loud equipment when patient moves in bed (like bed alarms) as these can further disorient and agitate the patient
 - o Focus on self-care and include the patient in the provision of self care when possible

(Kimchi & Lysetkos, 2015)

Non-Pharmacologic Approaches to Delirium

- o Be vigilant for any physiological change that could exacerbate delirium and work to correct this through nursing care
 - o Discomfort/pain
 - o Hypoxia
 - o Both of these may be corrected with repositioning for example

Delirium and Medications

- o Must take a careful and critical look at medications
- o Can use the Beers Criteria as a guide (American Geriatrics Society 2015)
Beers Criteria Update Expert Panel, 2015)
- o Less is more in delirium
 - o Use lowest doses of medications possible
- o Avoid medications that have action on CNS
 - o Benzodiazepines*—with one exception
 - o Opioids
 - o Anticholinergic medications

(Kukreja et al., 2015)

Pharmacologic Treatment for Delirium

- o The actual treatment is to use appropriate pharmacology to address the underlying cause
 - o For example, appropriate antibiotics to treat UTI
- o Otherwise, pharmacologic agents are employed to manage behavioral disturbances of delirium

Pharmacologic Strategies for Delirium

- o In managing the symptoms of delirium, pharmacology should only be used when the client is demonstrating risk of harm to self or others OR will prevent the client from receiving appropriate medical care
- o There are no FDA medications available to address delirium
- o These options should never be used for convenience

al., 2015)

(Kukreja et

Pharmacologic Strategies for Delirium

- o Antipsychotics are primary intervention as benzodiazepines have been demonstrated to worsen delirium
- o These should be used for the shortest amount of time
- o Can be administered IM or PO

Pharmacologic Strategies for Delirium

- o Low dose haloperidol has largest amount of evidence to suggest its efficacy
- o Second generation antipsychotics have also been used
 - o quetiapine (Seroquel)
 - o risperidone (Risperdal)
 - o olanzapine (Zyprexa)

al., 2015)

(Kukreja et

Antipsychotics and Elderly

- Linked to sudden cardiac death
- Particularly when they are used in clients with dementia
- Use of antipsychotics has been demonstrated to be associated with a 4.5 % death rate in this population
- Increased rates of death are linked with first and second generation antipsychotics

al., 2010)

(Narang et

Additional Risks of Antipsychotics

- o Extrapiramidal Symptoms
 - o Side effects of all antipsychotic agents
 - o Has been linked with causing aspiration
- o Neurological Concerns
 - o Antipsychotics have been linked with increased risk for stroke

(Narang et al., 2010)

Addressing Risk of Antipsychotics

- o Employ non-pharmacologic methods first to try to avoid use in delirium and dementia
- o Use only when necessary
- o Monitor for EPS
- o Monitor neurological functioning
- o Careful monitoring of cardiac status
 - o Including fluid and electrolyte balance
 - o Monitoring of QTc
 - o EKG monitoring

(Narang et al., 2010)

Non-Pharmacologic Management of Dementia in Acute Care

- First need to have an understanding of the level of cognitive impairment (can use one of the brief screening tools discussed earlier)
- Provide redirection and orientation
- Avoid changing locations frequently
- Keep familiar environment as much as possible
- Close supervision for safety

Non-Pharmacologic Strategies for Dementia in Acute Care

- o Training for nursing staff
- o Understanding that disruptive behaviors usually are brought about by a stimulus that the individual cannot express
 - o Assess for unmet needs and attempt to meet them

al., 2008)

(Moyle et

Non-Pharmacologic Management of Dementia in Acute Care

- o Sensitivity to communication
 - o Clear and direct
 - o Soft tone
 - o Remain calm
 - o Keep environment quiet when attempting to communicate
 - o Stand still/sit still when communicating
 - o Use preferred name to address the patient

o (Moyle et al., 2008)

Non-Pharmacologic Management of Dementia in Acute Care

- o Pay attention to the environment
 - o Modify the environment to be calm
 - o Eliminate excess stimulation
 - o Decrease stressors in the environment
 - o Account for any sensory deficits

al., 2008)

(Moyle et

Non-Pharmacologic Management of Dementia in Acute Care

- o Reminiscence therapy principles
 - o Discuss past events with clients
 - o Can use prompts
 - o Can help you to redirect the client

o (Woods et al., 2009)

Pharmacologic Strategies for Dementia in Acute Care

- In an acute care setting, pharmacology would only be employed to manage any behavioral or psychiatric disturbances of dementia
- Would manage these primarily with antipsychotics
- The same risks and administration concerns exist as when these medications are used in delirium



Questions

References

- Adamis, D., Sharma, N., Whelan, P.J.P., & Macdonald, A.J.D. (2009). Delirium scales: a review of current evidence. *Aging & Mental Health, 14*(5), 543-555.
- American Geriatrics Society 2015 Beers Criteria Update Expert Panel. (2015). American Geriatrics Society Updated Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. *Journal of the American Geriatrics Society, 63*(11), 2227-2246.
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders*. (5th ed.). Arlington, VA: American Psychiatric Publishing.
- Folstein, M.F., Folstein, S.E., & McHugh, P.R. (1975). Mini-mental state: A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research, 12*, 189-198.
- Fong, T.G., Davis, D., Growdon, M., Albuquerque, A., & Inouye, S.K. (2015). The interface of dementia and delirium in older persons. *Lancet Neurology, 14*(8), 823-832.
- Han, J.H., Zimmerman, E.E., Cutler, N., Schnelle, J., Morandi, A., Dittus, R.S., Storrow, A.B., & Ely, E.W. (2009). Delirium in older emergency department patients: recognition, risk factors, and psychomotor subtypes. *Academy of Emergency Medicine, 16*(3), 193-200.
- Inouye, S.K., van Dyck, C.H., Alessia, C.A., Balkin, S., Siegel, A.P., & Horowitz, R.I. (1990). Clarifying confusion: the confusion assessment method: a new method for the detection of delirium. *Annals of Internal Medicine, 113*(12), 941-948.
- Inouye, S.K., Westendorp, R., & Saczynski, J.S. (2014). Delirium in elderly people. *Lancet, 383*(9920), 911-922.
- Kimchi, E.Z. & Lyketsos, C.G. (2015). Dementia and mild neurocognitive disorders. In Steffens, C., Blazer, D.G., Thakur, M.E. (Eds.). *The American Psychiatric Publishing Textbook of Geriatric Psychiatry*, (5th ed). Arlington, VA: American Psychiatric Publishing.
- Kukreja, D., Gunther, U., & Popp, J. (2015). Delirium in the elderly: current problems with increasing geriatric age. *Indian Journal of Medical Research, 142*, 655-662.
- Moyle, W., Olorenshaw, R., Wallis, M., & Borbasi, S. (2008). Best practice for the management of older people with dementia in the acute care setting: a review of the literature. *International Journal of Older People Nursing, 3*(2), 121-130.
- Narang, P., El-Refai, M., Parlapalli, R., Danilov, L., Manda, S., Kaur, G., & Lippman, S. (2010). Antipsychotic drugs; sudden cardiac death among elderly patients. *Psychiatry, 7*(10), 25-29.
- Nasreddine, Z. (2017). The Montreal Cognitive Assessment. Retrieved from www.mocatest.org
- Saczynski, J.S. & Inouye, S.K. (2015). Delirium In Steffens, C., Blazer, D.G., Thakur, M.E. (Eds.). *The American Psychiatric Publishing Textbook of Geriatric Psychiatry*, (5th ed). Arlington, VA: American Psychiatric Publishing.
- Woods, B., Specter, A.E., Jones, C.A., Orrell, M., & Davies, S.P. (2009). Reminiscence therapy for dementia. *Cochrane Database of Systematic Reviews, 2*, 1-34.