OkDCN Nursing Home ECHO Project
Medication Effects: Delirium/Dementia

SEKI A BALOGUN, MD, FACP, CMD, AGSF

DONALD W. REYNOLDS PROFESSOR OF MEDICINE

VICE CHIEF OF EDUCATION

DIRECTOR, GERIATRIC FELLOWSHIP PROGRAM

DONALD W. REYNOLDS SECTION OF GERIATRIC MEDICINE

The UNIVERSITY of OKLAHOMA
Health Sciences Center

Learning Objectives

- Describe differences in clinical features of Delirium and Dementia
- Describe risk factors for Delirium
- Identify common medications that precipitate delirium
- Describe measures to prevent and manage delirium

Definitions

Dementia

- Acquired syndrome of irreversible significant decline in memory and other cognitive functioning sufficient to affect daily living

Delirium

- Rapidly developing, yet fluctuating, behavioral change that is characterized by inattention and altered arousal , incoherent speech, thought and action
- Memory and intellectual impairments
- Perceptual disturbances – delusions and hallucinations
- Reversible

Delirium vs. Dementia

DELIRIUM vs DEMENTIA

	DELIRIUM	DEMENTIA
ONSET	Acute	Insidious (months to years); may be abrupt in stroke/trauma
VITAL SIGNS	Typically, abnormal (fever, tachycardia)	Normal
COURSE	Rapid, Fluctuating	Progressive
DURATION	Hours to weeks	Months to years
CONSCIOUSNESS	Altered	Usually clear
ATTENTION	Impaired	Normal except in severe dementia
ALERTNESS	Impaired	Normal
BEHAVIOR	Usually agitated, withdrawn, or depressed; or combination	Intact early
SPEECH	Incoherent; rapid/slowed	Problems in finding words
PSYCHOMOTOR CHANGES	Increased or decreased	Often normal
REVERSIBILITY	Usually	Irreversible

Nurseslabs

Delirium: Risk Factors

Predisposing factors

- Advanced Age
- **Dementia**
- Functional impairment in ADL
- High medical comorbidity
- Hx of alcohol abuse
- Male gender
- Sensory impairment (blindness, deafness)

Precipitating Factors

- **Medications**
- Acute illness
- Postoperative
- Infections
- Fluid and electrolyte imbalance
- Bed rest/hospital admission
- Pain/discomfort
- Intracranial events
- Severe Anemia
- Use of Restraints

Why is Delirium Important?

- Common
  - 1 in 3 hospitalized older adult
  - 1 in 7 patients on admission to PA/LTC
- Poorer prognosis
  - Higher 30-day mortality
  - Higher hospital readmission rate
  - Lower likelihood of discharge home
  - Lower likelihood of physical function improvement

Diagnosis

Confusion assessment method (CAM) for the diagnosis of delirium*

Feature	Assessment
1. Acute onset and fluctuating course	Usually obtained from a family member or nurse and shown by positive responses to the following questions: ▪ "Is there evidence of an acute change in mental status from the patient's baseline?" ▪ "Did the abnormal behavior fluctuate during the day, that is, tend to come and go, or increase and decrease in severity?"
2. Inattention	Shown by a positive response to the following: ▪ "Did the patient have difficulty focusing attention, for example, being easily distractible or having difficulty keeping track of what was being said?"
3. Disorganized thinking	Shown by a positive response to the following: ▪ "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?"
4. Altered level of consciousness	Shown by any answer other than "alert" to the following: ▪ "Overall, how would you rate this patient's level of consciousness?" • Normal = alert • Hyperalert = vigilant • Drowsy, easily aroused = lethargic • Difficult to arouse = stupor • Unarousable = coma

* The diagnosis of delirium requires the presence of features 1 AND 2 plus either 3 OR 4.

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Inouye SK, van Dyck CH et al. Ann intern Med. 1990; 113(12): 941-948

Types of Delirium

Hyperactive
15%

- Agitation
- Restless
- Hallucinations
- Easiest to recognize
- Usually due to medications

Mixed
52%

Hypoactive
19%

- Withdrawn
- Somnolent, difficult to arouse
- Confused
- Common in encephalopathy
- Harder to detect
- Higher risk of mortality

Adapted from Geriatric Review Syllabus 11th edition.

Medications and Older Adults

- **Physiologic changes due to aging**
- Pharmacokinetics
- Pharmacodynamic effects

- **Drug - disease interactions**

- **Polypharmacy**
- Drug-Drug interactions
- Increased risk for an adverse drug effects
- Meds >5 (OR, 2.0)
- 7 to 8 medications, (OR, 2.8)
- 9 or more (OR, 3.3)
- Antipsychotics (OR, 3.2)
- Antidepressants (OR, 1.5)
- Other classes (warfarin, insulin, oral antiplatelet agents, oral hypoglycemic agents)

Field TS, Gurwitz JH et al. Arch Intern Med. 2001;161(13):1629.
Tinetti ME, Bogardus ST Jr et al. N Engl J Med. 2004 Dec 30;351(27):2870-4.
Budnitz DS, Lovegrove MC, Shehab N et al. N Engl J Med 2011;365:2002–10

Medications Associated with Delirium

Action on Central Nervous System

- Antipsychotics
- Opiates
- Barbiturates
- Benzodiazepines
- Nonbenzodiazepine hypnotics (eszopiclone, zolpidem)
- Antidepressants

Anticholinergic Agents

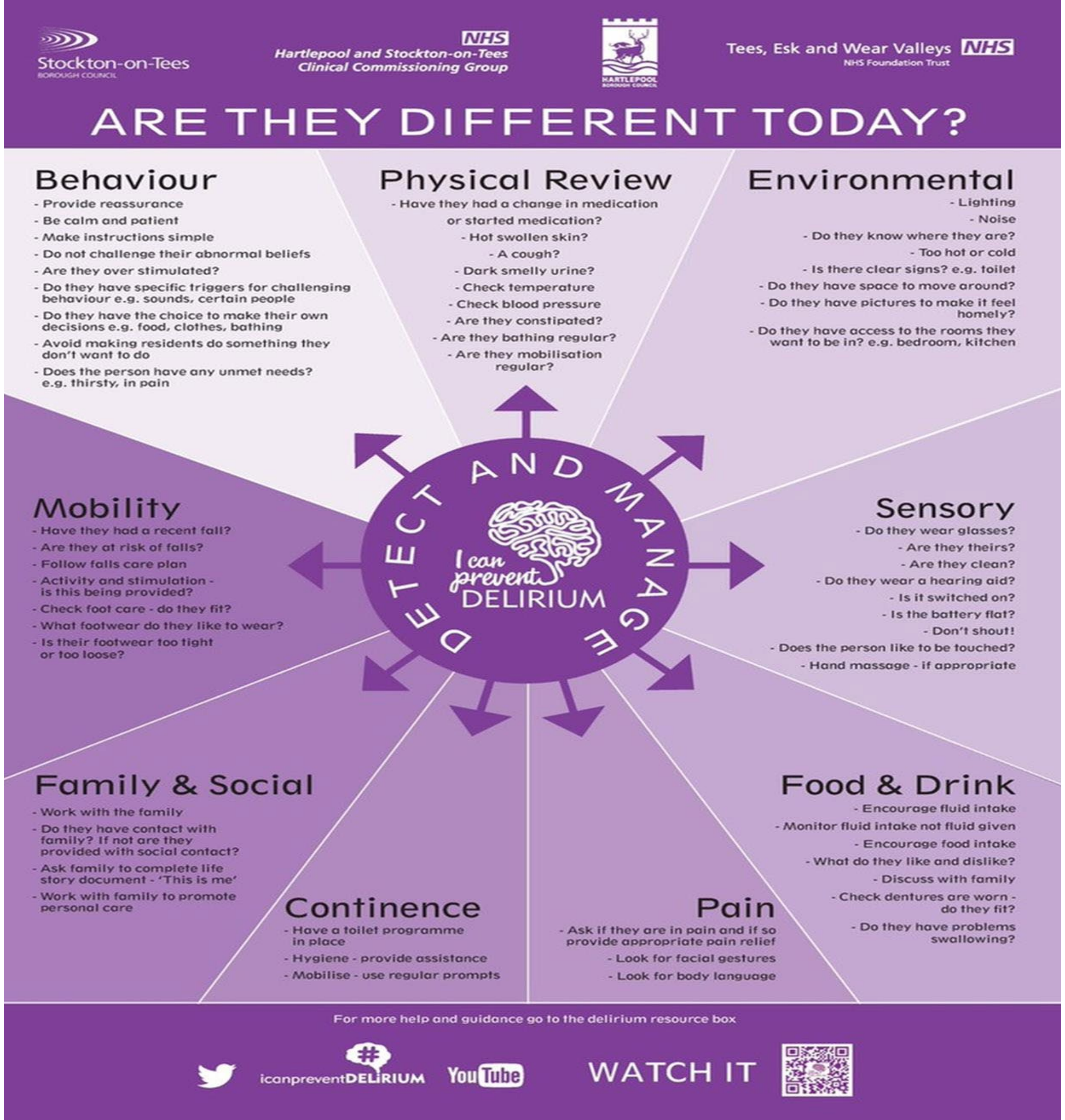
- First generation antihistamines (promethazine, diphenhyramine, hydroxyzine)
- Antiparkinson agents (benztropine)
- Antispasmodics (scopolamine, dicyclomine, hyoscyamine)
- Muscle relaxants (cyclobenzaprine, methocarbamol)

Cardiovascular

- Alpha-1 blockers (Doxazosin)
- Central alpha agonists (Clonidine, methyldopa)
- Diuretics
- Other Hypertension drugs

AGS 2019 Beers Criteria Update Expert Panel

Delirium Prevention



Delirium Management

Identify and treat underlying condition(s):

- Dehydration/electrolyte imbalance
- Infections
- Organ failure
- Hypoglycemia
- Pain
- Review medications

Medical and Environmental Support

- Orientation protocols
- Cognitive Stimulation
- Facilitate physiologic sleep
- Early mobilization
- Aids for sensory impairment

Manage Agitation

- Nonpharmacologic interventions
- Antipsychotic medications: severe symptoms and danger of harm to self or others, short term use