OASIS: the Prevention and Management of Delirium

Education for Nurse Practitioners

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Objectives

- To have a better understanding of the OASIS program, and
- The prevention, diagnosis & management of delirium

OUTLINE

1) Definition & significance of delirium
2) Screening & diagnosis
3) Management
4) Prevention & H.E.L.P.
5) OASIS Unit [a ‘little’ HELP]

1) Definition - Delirium

- A syndrome with acute disruption of attention and cognition (cognitive failure !)
- Diagnostic criteria *[DSM IV]*
  - 1. disturbance in consciousness w/ reduced ability to focus, sustain or shift attention
  - 2. change in cognition (e.g. memory/speech) with new perceptual disturbance
  - 3. develops over hours to days and fluctuates in severity
  - 4. has underlying medical cause

Delirium subtypes

1. **Hyperactive**: agitation, florid hallucinations & delusions, emotional lability, restlessness and hyperalert state. (less common)
2. **Hypoactive:** confusion, inattention, being quiet or sedated. (more common)
3. **Mixed:** A fluctuation between hypoactive and hyperactive delirium during the day. (more common)

Dementia vs Delirium

Delirium

- **Acute/subacute**
- **Fluctuating days/wks**
- **Impaired LOC**
- **STM reduced, inattentive**
- **Visual hallucinations**
- **Fleeting delusions**
- **Unpredictable motor**

Dementia

- **Insidious**
- **Progressive**
- **Clear till late**
- **STM reduced, less inattentive**
- **Uncommon**
- **Less common**
- **Variable**

Delirium - prevalence

- Prevalence = 25% avg. (14-56%)
  - Undetected in 32-67% of those admissions
- May occur in up to 88% of terminally ill
- Mixed syndrome in PC:
  - Delirium + Depression + Dementia + Pain
  - A manifestation of other problems
- AMS – "Altered Mental Status" – avoid term if possible
- Outpatients – triggers visit to practitioner ?

[Brown TM. Delirium. BMJ 2002;325:644-7.]

[Inouye SK. The Dilemma of Delirium. Am J Med 1994;97:278-88]

[Bruera et al. J Pain Sympt Mgmt 1992]

[LeGrand SB. Delirium in palliative medicine: a review. J Pain Symptom Manage 2012;44:583-94]

Delirium - significance

- Mortality increases = 10-65%
- Risk of "chronic" delirium in elders – only 18% @ 6mo. achieve complete recovery
- Occurrence = poorer outcome and greater LOS
- 66% may be superimposed on dementia
- 50% may be reversible
- 50+% of those recovering have distressing recall of events

*[*Levkoff. Delirium. Arch Int Med 1992]*

2). Diagnosis of Delirium: C.A.M.

Ely's Assessment Tool – 2 'steps' *

1. Sedation Assessment (Richmond Agitation-Sedation Scale - RASS)**
2. Delirium Assessment (Confusion Assessment Method – CAM)
   – >94% sensitive, >90% specific

* *E.Wesley Ely, & Vanderbilt U., 2002; JAMA 2003* [**Modified RASS @ ECM]

ECM's Modified Sedation Assessment RASS [Step 1 & Step 2.3]

Step 1 = What is the patient's baseline LOC?

Scale:

+1 = agitated, wide awake

0 = alert and calm

- 1 = drowsy, comfortable, easily arousable

- 2 = non-responsive or only to painful stimuli

Delirium Dx CAM [Step 2]:

Four Features Assessed (1, 2, + 3 or 4):

1. Acute onset of mental status changes or a fluctuating course ***and***

2. Inattention (easily distracted or has difficulty keeping track of what is being said)

- *And either:*

…Delirium Dx requires (1, 2 + 3 or 4):

3. Altered level of consciousness **currently** - vigilant (hyperalert, overly sensitive to environmental stimuli, startled very easily), lethargic (drowsy, easily aroused), stuporous (difficult to arouse), or comatose (unable to arouse)

   or,

4. Disorganized thinking (rambling or irrelevant conversation, unclear flow of ideas, unpredictable switching from subject to subject) – use if #3 = "0"

Dx of Delirium = CAM

1. **acute** onset of mental status changes or a fluctuating course; AND
2. **inattention**; AND either
   3. altered current LOC, OR
   4. disorganized thinking.

[need #1, #2, and either #3 or #4]

See CAM-ICU Flow sheet – if 1 + 2 + 3 present, stop!

Advantage: validated, sensitive

Disadvantage: no score to compare changes

C.A.M.: **Inattention**

- *Key feature of delirium*
- Delirium likely present if score <8/10
  - 10 ‘random’ letters: SAHEVAARAT
  - Squeeze fingers only when hear letter “A”
  - Error = fails to squeeze on “A” or if squeezes on any other letter

C.A.M.: **Disorganized Thinking**

Only ask if modified RASS = 0 (alert, calm)

- Four statements – positive if 2+ incorrect
- Set A [option Set B, if repeating in same day]
  1. will a stone float on water?
  2. are there fish in the sea?
  3. does 1 lb weigh > 2lbs?
  4. can you use a hammer to pound a nail?

Delirium - Easily missed dx

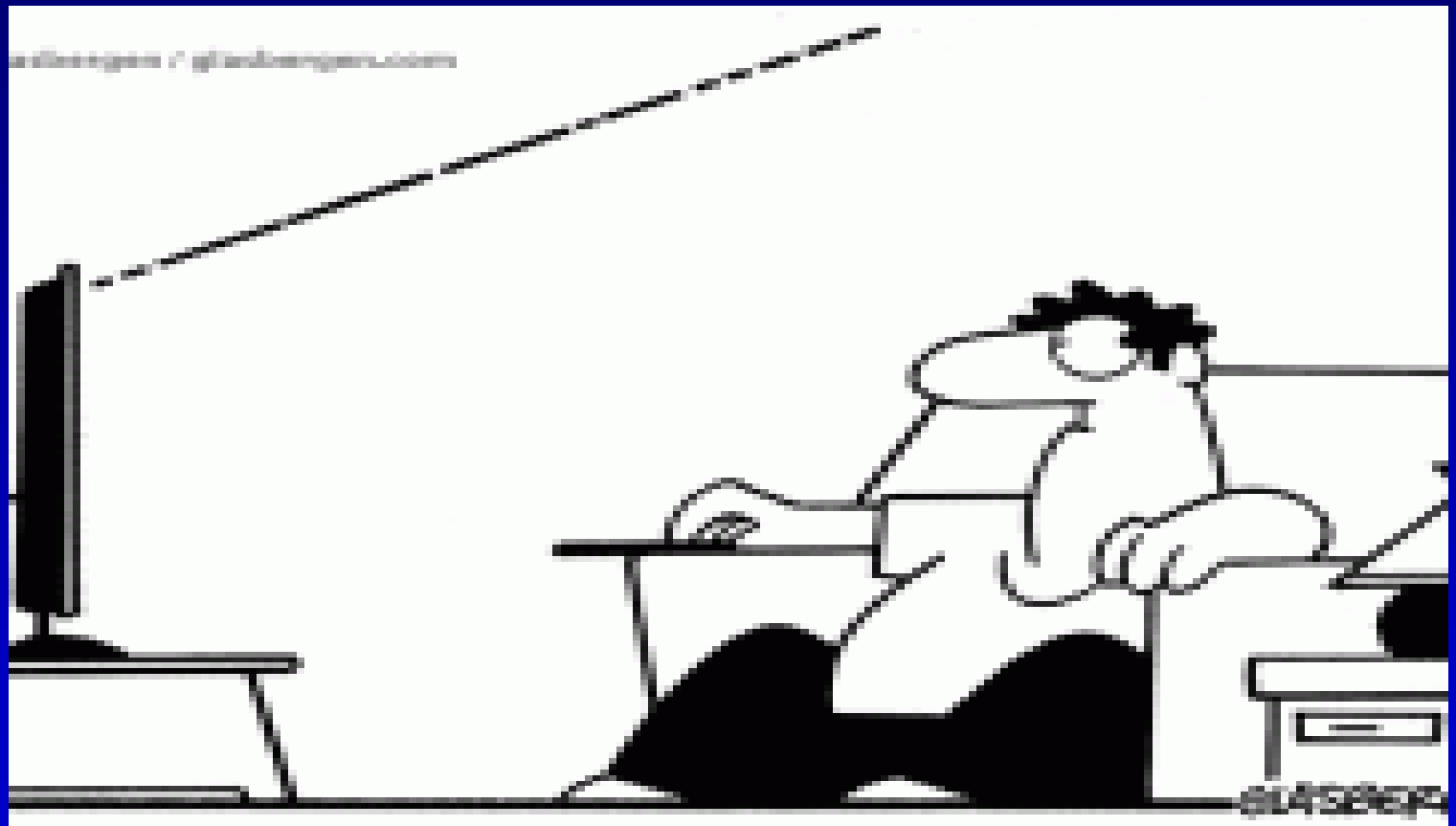
- Expect to see agitation and inappropriate, but can present w/ lethargy – the "hypoactive" form easily overlooked
  - Hyperactive, hypoactive, or MIXED
  - A disinhibition of brain – expressing symptoms and emotions – a "brain failure"
- Fluctuating nature confuses staff/MD's – usually worse evenings

Delirium - Common Causes

- **Drugs** – anticholinergics, anticonvulsants, anti-parkinsons, steroids, opiates, alcohol, benzo's
- Drug withdrawal – sedatives, opiates, alcohol
- Metabolic – Hypoxia, hypoglycemia, hypothyroid, fluid & electrolytes, ARF, hepatic failure, etc.;

Why do we take so many pills?

Tonight's program is sponsored by pills: red pills, blue pills, green pills, purple pills, pills and more pills!! Ask your doctor if pills are right for you?



Prescribing for Side-effects !

…Delirium - Causes cont'd

- Infections – especially UTI in dementias
- Head trauma; Rectal/Bladder Trauma !!!
  - i.e. Impaction or Retention
- Epilepsy
- Neoplasms
- Vascular – TIA/CVA, PTE, AMI, CHF
- Mnemonic - DELIRIUM

…'D-E-L-I-R-I-U-M' (causes)

D – drugs, depression, alcohol withdrawal;

E – endocrine, electrolytes;

L – loss of mobility, lighting;

I – infection, intracranial;

R – reduced senses (eyes, ears), restraints;

I – impaction;

U – urinary (UTI, retention);

M – myocardial (MI, hypoxia).

Brief [Office] Screening Tool *

- Delirium Triage Screen [DTS]
  - Altered LOC ? (*mRASS* other than 0 = positive; or mRASS = 0 but *'Inattention'* ['LUNCH' backwards] >1 error = positive)
    - If positive, do bCAM
- Brief Confusion Assessment Method [bCAM]
  - Inattention: name months backwards

* handouts

3). Delirium - Management

3.1 Investigations: treat underlying etiology

3.2 Provide environmental support

3.3 Drugs to manage symptoms

3.4 Terminal Delirium

Delirium 3.1- Investigations

- H&P, plus cognitive testing
- **Review meds** & side-effects (33% cause)
- Initial Lab: CBC, CMP, U/A, CXR
- PRN lab: TSH, Mg, B12, drugs, NH4, ABG, EKG, CSF, CT/brain, EEG

Delirium 3.2 – Environment Mgmt

[see OASIS order set !]

- **Noise** – minimize on ward !!! Room lighting !
- Family present + education !!
  - Write goals, etc on room board
- Same staff
- Hearing aids, glasses
- Activities & walking; AVOID restraints
- Stopping “wires & tubes” asap
  - Move out of ICU

Delirium 3.3 – Drug Mgmt

No drug is FDA-approved! Tx for the GOAL!

If not agitated [not hyper], no need for drug Rx.!!!

- Haldol = Drug of Choice [except L.B.Dementia]
  - Give ROUTINELY, **0.5-1mg** subQ (not po/ IV), Q6h + Q1h prn for breakthrough
  - Review Q 24hrs
- "Avoid" benzodiazepines [paradoxical]
  - Unless alcohol withdrawal
  - Use only if Haldol alone ineffective

Review doses and frequency **daily** !

…Pain's Effect?

- Pain doesn't cause delirium but clearly exacerbates it when present
- Use Tylenol Arthritis initially in frail elders, then tramadol [Ultram]
- Avoid hydrocodones – more confusion ?
- **Morphine or oxycodone, low doses helpful**

Delirium 3.4 - Mgmt Terminal

- Signs of active dying process
- Hyperactive/agitated or hypoactive
- DOC = Haldol – 0.5mg q30min subQ until controlled, then **1mg** q6h x 24h, then prn [max = 100mg/day]
- Thorazine [chlorpromazine] – 25mg q30min prn until controlled, then 100mg q6h; [max = 2000mg/day] – IV [rarely subQ – risk necrosis]

…Terminal Delirium

- Pain contributing, give MS/opiate escalating as needed till controlled or asleep (don't be timid !!)
- Palliative Sedation: Tx of 'Last Resort' needed usually. Principle of "double effect" in EOLC
  - Phenobarb subQ/IV/rectal – 130mg q4h

4). Delirium - Prevention & H.E.L.P.

- Common risk factors – *age, dementia, severe chronic illness, poor ADL, CVA, foley, hx of del.*
  Screening: SPMSQ* for elders on admission
  - Screen preOps in office ?? [or only w/ Risk Factors]
- Minimize contributing causes – e.g. avoid ICU if possible; ***avoid high risk drugs***
- Daily orientation, cognitive stimulation, ambulation/ROM exercises daily, H.aids

[* Short Portable Mental Status Questionnaire]

Prevention: H.E.L.P.

- **H**ospital **E**lder **L**ife **P**rogram
- Started in USA in 1999
- Goal: prevent delirium and functional decline in hospitalized older persons
- Requires skilled staff and volunteers
- Targets 6 risk factors:
  - orientation, therapeutic activities, early mobilization, vision & hearing protocols, oral volume repletion, sleep enhancement.

…H.E.L.P.

- Effective for:
  - Reducing falls
  - Cost savings
  - Reducing incidence of delirium
  - Shorter LOS
  - Increasing satisfaction for staff, families, patients
- *OASIS* is a *mini-H.E.L.P.* – expand ? ??

5). The OASIS Unit

- **Older Adult Specialty Inpatient Service**
  - w/ Delirium Rooms
    - *Chong MS, 2011. Flaherty JH, 2010.*
- Purpose: Multidisciplinary approach w/
  - Specially designed environment
  - Seniors-centered care for those with acute on chronic problems, w/ high risk of delirium, needing efficient, holistic evaluation & treatment and return to prior setting or to rehab prn
  - Goal = 3-4 day LOS; better QOL

Admission Criteria

Age >70 plus 2 of:

- Recurring hx confusion/delirium
- Polypharmacy [5+ meds]
- Recent increase falls or ADL assistance
- Multiple co-morbidities
- Any dementia
- Repeated ER visits or hospitalizations

Need Dx that meets Medicare admission criteria

[e.g. PNA, pyelitis, COPD-AE, delirium]

Risk Factors for Delirium

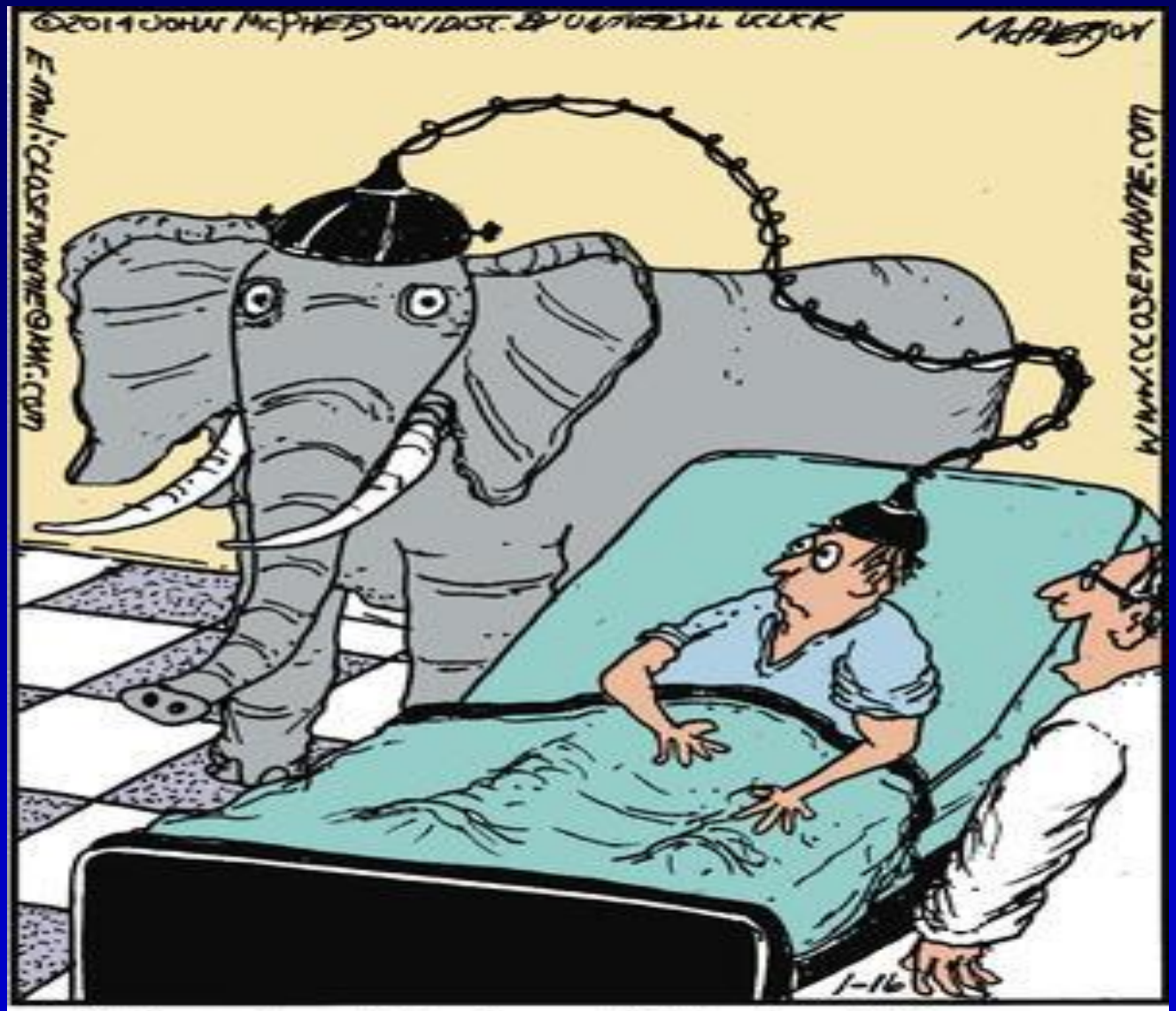
- **Dementia**
- CVA
- Parkinson's
- Foley cath.
- **Polypharmacy** [5+; or, 2+ drugs unnecessary]
- Prior delirium/confusion
- Poor ADL status &/or recurring falls

…OASIS w/ Delirium Rooms

"Delirium rooms":

- 24/7 observation by staff [RN + PCA]
- contiguous 4+ beds [551-554 +]
- Restraint free; no SCD's/telemetry;
- Noise & light control
- Family education
- Managed by RN - **follow medical protocol**
  - **Latest therapies…**

OASIS offers latest therapy



OASIS Admission Order Set

- DAT – only special diet is ‘NCS’
- AAT – PT to advance
- Labs/Imaging – CBC,CMP,B12,TSH,U/A, CXR, +
- Automatic consults – PT, Pharmacy, Dietary, +/- OASIS Med.Dir. prn
- Meds – review for Beers HRM/PIM *
- Environment/Orientation – d/c telemetry & SCD’s; lighting; hear.aids?; glasses?

** High Risk Meds; Potentially Inappropriate Meds*

OASIS Benefits Anticipated *

- ADL functions improved
- Reduce intensity & symptoms of delirium faster
- Improved cognition at 6mo
- Reduced use of restraints
- Reduce mortality, LOS, costs

* findings NOT consistent among studies

OASIS Data To Date

- Bed census – 46 admits Oct.1/13 – Feb.26/14
  - ADC = 3
- ALOS – 6.5days Oct/13; 3.7days Jan/14
- Patient/family satisfaction – 100% !!
- CVO time – 0 hrs [Continuous Visual Observation]

Are OASIS Patients Eligible for PC's Grim Reaper?

OASIS v Palliative Care

- OASIS is not subsidiary of PC Service
  - But patients have many similar issues
  - Patients on OASIS often benefit from incorporating PC principles (e.g. clarify goals of care, comfort focus, reduce meds)
  - Order set reflects similar goals of PC
- A few patients have transferred to 6W PCU

You know you are getting old
when everything either dries up or leaks.

- Maxine

THANK YOU !

DT's [Delirium Tremens]

- Severe symptoms 2-4 days after last drink
  - can last 3-4 days
  - severe agitation, autonomic s/s (fever, tachys, diarrhea)
  - Hallucinations – visual or auditory
  - Disorientation, delusions, seizures [up to 5days]

- Mortality – 5%
- Men > women [5x]
- Risk factors: prior hx DT, years drinking, seizures

Detox: General Management

- Assessment & Dx of comorbidities
- Stabilize ALL medical problems
- Drug screens (alcohol and other drugs)
- Initiate CIWA

- Discharge Planning: AA / ALANON / Rehab ?

…General Mgmt for Detox

- Fluid & electrolytes
- Thiamine [vit.B1] – 100mg po/IV [to prevent acute Wernicke Encephalopathy [W.E.]* = give before glucose]
- Antacids – protonix [PPI] or Pepcid [H2B] – reduce risk GI Bleed
- Delirium screening & mgmt: CIWA…

* confusion + ophthalmoplegia + ataxia; [W.E. can evolve chronically into Korsakoff Synd (amnesia + confabulation)]

CIWA

- 10 measures – max score 67
  - Higher the score, higher risk of DT's
- "Severe" withdrawal = score >14 = risk confusion & seizures
  - Require medication mgmt
  - Drug dose & frequency symptom-triggered

CIWA: Alcohol Withdrawal Assessment Pre-Printed Orders

1. Utilize CIWA tool for nursing measurement of symptoms.

- The scale measures 10 symptoms.
- Scores < 8 indicate min.- mild withdrawal.
  = No Rx needed usually
- Scores 8-14 indicate mod. withdrawal.
- Scores 15+ indicate severe withdrawal (impending DT's).

…CIWA Orders

2. Nursing to perform assessment Q 4 hrs as long as score is 0-7.

   Score 8-14, assess Q 2 hours.

   Score 15 or more, assess Q 1 hour.

- If patient is asleep, the score is 0.