

DELIRIUM – CASE QUESTIONS

References: Nejm 2006;354:1157, LLB Geri 3rd Ed pp. 181-183, AFP

- OBJECTIVES:**
1. DX: Know how to recognize & test for delirium
 2. COURSE: Identify causes & prognostic signs of delirium
 3. TX: Know how to prevent & manage delirium

CASE: You are asked to see a 78 yo retired Colby professor who fell crossing the street. He could not get up on his own. In the ER he reports significant R leg pain, and appears confused. The ER Dr. has ordered films.

1) You ask a few questions about the 2 obvious geriatric syndromes that he is presenting with:

- a. Did he lose consciousness? - *No*
- b. Does he fall frequently? And what were the circumstances this time?
- *Doesn't fall / Just wasn't watching his step / Has been weaker last few wks.*
- c. Is the confusion new? – *Some memory loss last yr, but confused after he fell and after getting morphine in ER.*

2) Significant negatives & positives in the HPI cover a wide differential. You tell the medical student the mnemonic for causes of delirium: Jags 2003;51:1031, Appndx 1

D	Drugs
E	Eyes, ears
L	Low oxygen states (MI, stroke)
I	Infection
R	Retention of urine or stool
I	Ictal
U	Underhydration, undernutrition (anemia)
M	Metabolic
S	Subdural hematoma / sleep

ROS: generalized weakness, fatigue, but no wt loss last 6 mo, recently changed glasses, often doesn't wear hearing aid, no angina, no SOB, dizzy with standing, has decreased stream, dark stools last few mos w. some epigastric discomfort, no sz, no slurred speech or numbness or episodic extremity weakness, light sleeper, chronic R knee pain & severe R hip pain now, no depression nor psychosis.

PH: IMI age 70 (EF 45%) on ASA; HTN on HCT 2 12.5, Beta Blocker DC'd recently; R knee OA – on Tylenol PM, occas. NSAIDs – more last 3 wks; UTI – last day of Cipro.

SH: Lives with wife of 55 yrs who herself is frail, neg. for smoking, +ETOH distant past – recently increased. All IADLs intact.

PE: Remarkable for BP 100/60 supine, HR 108, pale conjunctiva, slight epigastric tenderness, + guaiac, BPH, ext. rot. R leg, can't spell 'WORLD' backwards, disoriented to place, doesn't follow simple directions well, like "Squeeze my hands," therefore- Cranial Nerves, strength, position sense, cerebellar function are all difficult to test. Cogwheeling neg., DTR intact in upper & lower extremities, he can move his extremities.

3) Does he meet criteria for delirium? List possible etiologies.

4 criteria assessed by Confusion Assessment Method (CAM)

-Inouye SK, Nejm 1999;340:669

- 1) Acute onset & fluctuating
- 2) Inattention
- 3) Disorganized thinking

OR

- 4) Altered level of consciousness

Possible causes for this pt:

Cipro, Tylenol PM, ETOH (withdrawal), pn or pn meds (morphine)

Change in glasses, hearing deficit

UTI

Urinary retention

R/O: anemia – GI bleed, metabolic, ? PMR

Subdural

Sleep problems

4) You explain a few key points about the Px for delirium and the seven risk factors to the med. student:

- √ 1). Age: 1/3 pts > 70 yo admitted to hosp. w. delirium w. 10x risk of death up to 2 yrs after hospitalization & poor functional recovery.
- √ 2). Dementia: 70% of pts. w. dementia admitted to hosp. will develop delirium
- 3). Functional Impairment
- √ 4). Medical co-morbidities
- √ 5). ETOH
- √ 6). Male
- √ 7). Sensory deficits

5) You check to see if appropriate lab tests have been ordered by the ER Dr.

CBC - *nl w. Hct 29% (baseline 37%)*

CMP - *nl Creatinine 1.3, Cr Cl = _____ (?) in this 70 kg male.*

Ca - *nl*

UA - *nl*

ETOH level- *0 NH 4 not necessary at this time*

EKG - *nl*

CXR - *nl no need for ABGs at this time*

CT Head - *nl no need for LP to r/o meningitis in this presentation*

Hip film - R intratrochanteric fracture

Might consider cortisol, ESR (PMR), B12, VDRL later depending on hosp. crs.

6) Ortho recommends open reduction fixation. As you sit down to write orders, you review with the med. student the 7 predictors of non-cardiac post-op delirium:

- √ 1). Age
- √ 2). Cognitive impairment
- 3). Functional impairment
- 4). Markedly abnormal serum chemistries
- ? 5). ETOH
- 6). Intrathoracic surgery
- 7). AAA surgery

Score: 0 pts = 2% risk, 1-2 pts = 10% risk, >3 pts => 50% risk

Pt has ~ 10% increased risk for further delirium.

7) You review meds that cause delirium to decide which ones to discontinue on pre-op admission orders:

Sedative hypnotics

Narcotics

Anticholinergics (antihist, anti-spasmodics, tricyclics, anti-parkinsonian,
anti-arythmics - Quinidine, Norpace)

Cardiac (Digitalis, Lidocaine)

Anti-hyertensives (Beta-blockers, Aldomet)

Miscellaneous (H-2 blockers, steroids, Metoclopramide, Lithium, NSAIDs,
anti-convulsants, Cipro)

- a) You do not order Cipro, Tylenol PM, ASA (poss. GI bleed), HCTZ (BP low)
- b) **What are the pro's and con's of ordering Beta-blockers pre-op?**
Cardioprotective, but no inc. risk in this pt, and can lower BP & cause delirium.
Has an increased pulse which may be rebound from discontinued Beta-blocker,
not just from pain or decreased hematocrit.
- c) Needs his MS for pain – will monitor closely

8) There are 2 meds you decide to order promptly:

Thiamine before glucose added to IV. (H/O ETOH, weakness– not sure of
dietary intake, though no sig. wt. loss)

Prilosec (for possible GI bleed – no H-2 blocker, causes confusion)

9) In anticipation of post-op delirium, you suggest the following nursing care:

Continue reorientation of pt w. staff & family

Avoid physical restraints, D/C urinary catheter post-op asap,

early mobilization (2 days for screw vs 1 day for total hip prosthesis)

Non-pharmacologic sleep protocol – music, massage, relaxation techniques,
don't wake pt in middle of night for vitals, etc.

Use eyeglasses, hearing aids

Watch volume status – *Flow Sheet, Nejm 2006;334:1157*

10) Post-op day 1, pt. is laying quietly sedated, talking v. little, thinks he is home. What are tests of attention, in order of difficulty, that you should consider, to R/O “quiet delirium” (75% of delirium cases)?

- 1) Serial 7’s from 100
- 2) Serial 3’s from 40 or 20
- 3) “WORLD” backwards
- 4) Months of the year, backwards
- 5) Days of the week, backwards
- 6) Count backwards from 10

a) Describe the utility of the A Slap Test?

- Does not require the executive function involved in understanding the concept of “backwards.”
- Examiner should state each letter a second apart

11) The second post-op night, is trying to climb out of bed, is yelling for his mother; had been restless all day w. poor ability to follow PT instructions. You need to order a med for agitation. What is your decision process? *Table 4, Nejm 2006;354:1157*

Haldol 0.5 – 1.0 mg IM or po (IV short acting – only 3x on floor)
Repeat does Q 30 min until sedation achieved (max. dose 3-5 mg/24 hrs)
Maintenance: 50% loading dose in divided doses over next 24 hrs.
Taper dose over next few days

Atypical antipsychotic agents: not as effective.
Benzodiazepines: NOT GOOD for delirium, only for withdrawal sympts.
Aricept: theoretical usefulness
Trazodone: uncontrolled studies

12) By the 5th post-op day, the pt. is clearing, and you are planning D/C to a skilled unit. GI dx: small healing gastric ulcer – relative contraindication to anticoagulation S/P hip fxr. Dexa planned for D/C after discharge from NH – too expensive in NH. What elements of cognitive rehabilitation might you suggest in your discharge summary? *Table 1: Annals of Long-Term Care 2008;16[2]:40*

[Insert Scanned pg here: Cognitive Interventions by Level of Difficulty]