Delirium and Dementia
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Summary

• DELIRIUM
  • Acute brain failure
  • Identify cause (meds, infection)
  • Treat sx
  • Poor prognostic sign

• DEMENTIA
  • Chronic brain failure
  • AD most common cause
  • Often more than one type of dementia present
  • Treatment: cholinesterase inhibitors and memantine
  • Research-disapointing
Delirium Clinical Features

- Acute onset
- Fluctuating course
- Inattention
- Disorganized thinking
- Altered level of consciousness
- Cognitive deficits

Clinical Features (cont.)

- Perceptual disturbances (illusions or hallucinations in 30% of patients)
- Psychomotor disturbances (hyperactive or hypoactive)
- Altered sleep-wake cycle
- Emotional disturbances, including labile mood

Inouye SK. Delirium in older patients. NEJM ; 354:1157-1165 March 16, 2006
Clinical Features

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Delirium

• 20% of inpatients 65 or older
• 36.8% of surgical pts

• 50%-80% incidence in ICU

• Cost of delirium in US: $38 million to $150 million

• Prevalence is 1-2% in the community
  Inouye SK. Delirium in older patients. NEJM. 354:1157-1165 March 16, 2006
Etiology

- Usually multifactorial
- Occasionally one prime factor, but usually a combination of:
  - illness (beware infection, sepsis)
  - meds (beware anticholinergic or sedating drugs)
  - labs (glucose, lytes, CBC)
- Associated with decreased cerebral blood flow: prefrontally, thalamus, basal ganglia; altered cholinergic system; inflammation; chronic “stress” -> hypercortisolism, cytokines

Numerous and widely varying precipitants can activate delirium in susceptible (high baseline vulnerability) patients. In their landmark study, Inouye and Charpentier (1996) separated out baseline risks present at admission (e.g., prior cognitive impairment) from precipitants affecting the patient after admission (e.g., new-onset respiratory insufficiency). Robust patients with less baseline vulnerability (“more cerebral reserve”) were more resilient to new precipitants after admission (Figure 8-4).

FIGURE 8–4. Interrelationship of baseline and precipitating factors in delirium.

Delirium and Dementia

- One year mortality rate is 35-40%
- Dementia pts have 2-5 fold increased risk of developing delirium
- 2/3 of delirium pts also have dementia  
- Pts who develop delirium after cardiac surgery have a lower MMSE score  
- (those pts. With dementia and delirium die earlier than with dementia alone: Relative risk of death increased 1.8 times)  

Research using multivariate and logistic regression analyses has demonstrated that delirium independently increased mortality risk in study samples. For example, Ely et al. (2004a) found a 6-month mortality hazard ratio of 3.2 for ICU patients who had been delirious while on the ventilator (Figure 8–6).

**FIGURE 8–6.** Delirium and mortality in intensive care unit patients.

Delirium and Dementia

• Survey of 263 hospitalized pts with AD
• 56% developed delirium; rate of deterioration BEFORE hospitalization was not different
• BUT...Those with delirium had “twice the rate” of deterioration in the year following admission, AND the increased rate of deterioration continued for FIVE YEARS


Delirium - Evaluation

• Evaluate meds (sedating meds, anticholinergic meds)
• Infection: Vital signs, u/a, chest x ray
• Labs: CBC, lytes, BUN, Cr, LFT’s, ammonia, glucose, EKG, O2 sat

• MMSE – can be widely varying
Etiology (cont.)

- Also – consider...
  - weakened state (dementia)
  - substance abuse
  - sensory impairment

- Post-op care

- Sleep deprivation (in hospital)

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Delirium - Treatment

- FIND THE ETIOLOGY!!
- (But, half the time, there is not one etiology)
- Maintain patient safety
  - Manage the environment (reorient pt, clock, calendar are helpful); maintain hearing aids, glasses
  - Prevent hypoxemia, infection, constipation
  - Manage agitation (behaviorally, meds)
  - Remember EtOH or drug (including prescribed) drug withdrawal
  - Treat pain
  - TAKES DAYS TO WEEKS TO CLEAR

Management

- Check med list
- Check labs
- Any treatable cause? Tune up?
- Treat pain
- Adequate nutrition
- Supportive environment
• Combination of Haloperidol 5 and lorazepam 2mg
• Can be put in the same syringe
• Less likely to develop EPS (6%)
  

• Combination Rx superior to either alone
  

Meds for Agitation – Geri’s

• Haloperidol 1-2 mg IM or PO
• Atypicals (quetiapine 50-50 bid) – commonly used, generally well tolerated, but no double blind trials
  

• Lorazepam 0.5 to 1 mg IM or PO or IV
Prevent Delirium?

- Good nutrition (pts with low albumin more likely to get delirium)
- Tune up (cardiac condition, DM)
- Meds?
  - melatonin 0.5 mg hs Al-Aama T, et al. Melatonin decreases delirium in elderly patients: a randomized, controlled clinical trial. Int J Geriatr Psychiatry. 26:687, 2011
  - risperidone 1 mg hs one time in PACU reduced delirium from 32% to 11% Prakanrattana U and Prapaipradim S. Efficacy of risperidone in preventing delirium in cardiac surgery. Anaesth Intensive Care 35(5):714-9, 2007
  - donepezil, rivastigmine-not helpful (in 5 separate trials)

Prevent Delirium?

- 67 elder patients admitted to ICU given either ramelteon 8 mg hs x7 days (a melatonin agonist) or placebo
- 3% of those on ramelteon became delirious compared to 32% (!!) on placebo (p=0.003)
- Melatonin, released by the pineal gland, helps to regulate sleep/wake rhythms