

Pre and Post test:

1. **72 year old male is admitted to the general surgery team because of acute abdominal pain. His history includes ischemic stroke, hypertension, depression/anxiety, hearing impairment, and insomnia. His home medications include aspirin 81mg, metoprolol 50mg Q12, citalopram 20mg po daily and lorazepam 1mg TID. Which of the following would be the best option to prevent delirium in this patient?**

- A. Start him prophylactically on haloperidol.
- B. Stop his home dose of lorazepam
- C. Stop his home dose of citalopram
- D. Make sure patient has his hearing aids

Answer: D; Make sure patient has his hearing aids

Make sure patient has his hearing aids Using prophylactic antipsychotics has not been proven to prevent delirium. Since patient has been on lorazepam for years, just stopping the medication could cause him to do into withdrawal and cause delirium. Since patient is chronically on citalopram, it is not recommend stopping this medication.

2. **68 yr old women with PMHx of CAD, COPD, ongoing tobacco use (1 PPD for 50 years), HTN, history of alcohol use (drinks 2 highballs every night at dinner) and recent diagnosis of colon cancer is evaluated in the SICU for disorientation. The patient recently underwent hemicolectomy and team is having difficult time weaning the patient off the ventilator. While on the ventilator, she has received small dose of lorazepam over the past 48 hours and appears comfortable. She is disoriented, not interacting well with her family as she was before. Which of the following risk factors places her at highest risk for the development of delirium?**

- A. Her Age
- B. ICU admission
- C. History of alcohol use
- D. Type of surgery performed
- E. Use of lorazepam

Answer B: ICU Admission:The incidence of POD is as high as 87% in patients admitted to the ICU and places this patient at very high risk for development of POD. Age at highest risk is those ≥ 70 years of age. This patient has multiple risk factors; Additional risk factors are history of COPD, history of smoking, use of benzodiazepines, alcohol withdrawal, use of sedatives, mechanical intubation, acute respiratory failure, multiple comorbidities, and cancer diagnosis.

3. **The diagnosis of delirium is often missed because**

- A. The patient is combative to nursing staff
- B. The patient is hallucinating
- C. The patient responds to closed-ended questions appropriately
- D. The patient's mood is labile
- E. The patient is not oriented to place

Answer: C: The patient responds to closed-ended questions appropriately. Asking closed ended questions without following the key aspects of delirium diagnosis, may mask delirium, if the patient provides appropriate answer. The acute, fluctuating changes in consciousness and cognition, attention deficits and disorganized behavior are key in diagnosing delirium and they may present as described in options A, B, D and E.

4. **A 79-year-old woman was hospitalized 4 days ago after being admitted for elective laparoscopic cholecystectomy. Current medications include donepezil, metoprolol, and low-molecular-weight heparin. On physical examination today, temperature is 37.2°C (99.0°F), blood pressure is 90/68 mm Hg, pulse rate is 110/min, respiration rate is 18/min, and BMI is 21. She is inattentive and disoriented to time and place and exhibits increased agitation at night. The remainder of the neurologic examination is unremarkable, without evidence of focal findings**

Q: What is the appropriate next step?

- A. start Diphenhydramine to help sleep at night
- B. start Lorazepam to help calm the patient down
- C. start IVF to help with dehydration
- D. start the patient on IV dilaudid for pain control.

Answer is C: start IVF to help with dehydration.

The goal with treatment of delirium is to try and correct any precipitating factors if possible. Since this patient is dehydrated, it is best to first start with hydration. This patient definitely could be having uncontrolled pain but would want to start with Tylenol first. It is not recommended to use diphenhydramine nor lorazepam in older adults, especially who are delirious, since it can worsen their delirium.

5. **Which of one of the following is an intraoperative risk factor for postoperative delirium?**

- a. American Society of Anesthesiologists risk classification of 2.
- b. Body mass index of 29
- c. Age of 60.
- d. Intraoperative blood transfusion >1000ml
- e. Mild cognitive impairment (MMSE=27)

Answer: D: Intraoperative blood transfusion >1000ml. Intraoperative blood transfusion >1000ml is risk factor for postoperative delirium. The American Society of Anesthesiologists risk classification of ≥ 4 is a risk factor for postoperative delirium. A BMI <18 is also a risk factor. Cognitive impairment is a risk factor if dementia is <25/30. Age is a risk factor but >70 present the highest risk for development of delirium.

Question: Please rate the level of importance that General surgery residents should know the following:		Not Important At All (0)	Of Little Importance (1)	Of Average Importance (2)	Very Important (3)	Absolutely Essential (4)
6.	Treatment strategies for the management of postoperative delirium					
7.	How to screen for postoperative delirium using a validated assessment tool (e.g. 4AT)					
8.	Strategies to prevent postoperative delirium					