

American College of Clinical Pharmacy  
2019 Pharmacotherapy Mock Exam

ERRATA

**Correction:** Items 1641, 1695, and 1792 were removed, as they were found to be out-of-date during an audit in July of 2020. They were replaced with three questions in the same content areas, covering the same categories.

---

*Item 1641:* A clinical pharmacist is tasked with building sepsis bundles as a quality improvement measure at the facility. Which of the following should be included on the 6-hour bundle pathway?

- A. Measure lactate level.
- B. Obtain blood cultures prior to administration of antibiotics.
- C. Administer 30 ml/kg crystalloid for hypotension.
- D. Apply vasopressors to maintain a MAP > 65 mm Hg refractory to fluid resuscitation.**

**Detailed Explained Answer:** All of the other answers should be included on the 3-hour bundle. Applying vasopressors to maintain MAP falls under the 6-hour bundle.

**Reason for Removal:** There are newer recommendations for 1-hour bundle versus 6-hour bundle.

---

*Item 1695:* According to Beers Criteria, which of the following statements is accurate regarding benzodiazepine use and cognitive function?

- A. Benzodiazepine use increases the risks for all-cause dementia and Alzheimer's disease specifically
- B. Benzodiazepine use increases the risk for Alzheimer's disease only
- C. Benzodiazepine use is associated with a steeper decline in overall cognitive function
- D. Benzodiazepine use has no significant effects on cognition, but long-term use is discouraged**

**Detailed Explained Answer:** The recent large study by Gray and colleagues failed to find an association between benzodiazepine use among older adults and the risk for incident dementia, or Alzheimer's disease specifically. Similarly, benzodiazepine use did not correlate with rates of cognitive decline across the cohort. However, since 2012, The American Geriatrics Society (AGS) has urged clinicians to avoid use of benzodiazepines in older adults due to associated adverse effects. That recommendation is being reiterated in the AGS 2018 prescribing guidelines (called the Beers Criteria), which are under final review.

**Reason for Removal:** The choice marked as "most correct" assumes clinical judgement, but it doesn't make the other two incorrect statements. Options B and C require subjective clinical judgement.

---

*Item 1792:* In a randomized controlled trial, the mean change from baseline in daily incontinence episodes for oxybutynin gel compared to placebo differed ( $p < 0.0001$ ).

	Mean change from baseline in daily incontinence episodes
Oxybutynin	$-3.0 \pm 2.7$
Placebo	$-2.5 \pm 3.1$

Which of the following best describes these results?

- A. Oxybutynin significantly decreased daily incontinence episodes compared to placebo.
- B. Although statistically significant, the results may not be clinically significant.**
- C. Larger differences in incontinence episodes are required to reach clinical significance.
- D. Statistical significance was reached because the p-value is less than 0.05.

**Detailed Explained Answer:** Although oxybutynin statistically significantly decreased daily incontinence episodes compared to placebo (choice A), as shown by the p-value less than 0.05 (choice D), the results may not be clinically

significant (choice B) as the decrease in daily incontinence episodes differ by 0.5. It is unknown whether larger differences in incontinence episodes are required to reach clinical significance (choice D), as this would be patient specific.

**Reason for Removal:** It seems most of the justification and answer options come from the study conducted by Gray and colleagues; however, the stem indicates the information should be from the BEERS criteria. In the 2019 BEERS updates, the table reports that benzodiazepines increase cognitive decline and should be avoided with dementia, which could be interpreted as option C being correct. (Per the BEERS criteria, "In general, all benzodiazepines increase risk of cognitive impairment, delirium, falls, fractures, and motor vehicle crashes in older adults.")