# Self-Assessment Questions

## Educational Module 1: **Predictable Adverse Drug Reactions**

The correct answer is **Bolded**.

*(To be used with Pocket Card available as reference)*

1. When co-administered which of the following combination of drugs have an interaction potential?

   a) Codeine and erythromycin because erythromycin inhibits codeine's conversion to morphine by CYP 3A.

   b) Codeine and ETOH because ETOH induces CYP 2E1 and increases the amount of toxic metabolite formed from codeine.

   **c) Codeine and paroxetine because paroxetine inhibits codeine's conversion to morphine by CYP 2D6.**

   d) Codeine and St. Johns Wort because St. Johns Wort inhibits codeine's conversion to morphine by CYP 2D6.

   e) Codeine and tobacco because tobacco inhibits codeine's conversion to morphine by CYP 2D6.

2. In which patient co-administered the following drugs would torsade de pointes be a concern?

   **a) Ketoconazole and cisapride because ketoconazole inhibits CYP 3A and increases cisapride levels.**

   b) Ketoconazole and Cisapride because ketoconazole inhibits CYP 2D6 and increases cisapride levels.

   c) Cefaclor and cisapride because cefaclor inhibits CYP 3A and increases cisapride levels.

   d) Cefaclor and ketoconazole because cefaclor inhibits CYP 3A and increases ketoconazole levels.

   e) Cisapride and ketoconazole because cisapride inhibits CYP 2D6 and increases ketoconazole levels.

3. Which of the following statements concerning Adverse Drug Reactions is true?

   a) Total cost for ADRs rank 6th on yearly national health care expenditures.

   b) Total costs for hospital patients with an ADR are 5 times those of patients without an ADR.

   c) ADRs are responsible for 1 out of 25 injuries or deaths per year in the hospital.

   d) Patients in the hospital experiencing an ADR have the same mortality as those not experiencing an ADR.

   **e) The yearly costs for ADRs are greater than total costs for cardiovascular or diabetic care.**

4. Which of the following statements is true?

   a) ADRs are responsible for significantly fewer deaths than pulmonary disease, diabetes, and pneumonia.

   **b) There are enough prescriptions filled yearly in the United States to average 10 prescriptions for every person in the United States.**

   c) On average, an increase in the number of concomitant drugs does not increase the risk of an interaction until 6 are given at the same time.

   d) Forty-seven percent of patient visits result in a prescription.

   e) In general, patients have little concern about potential drug interactions.

5. Which of the follow is true?

   a) When new drugs are approved, their toxicity profiles are fully evaluated.

   **b) There have been an average of 1500 subjects exposed to each new drug approved for marketing.**

   c) If a new drug causes liver failure in 1 out of 20,000 people, it will easily be recognized before the drug is released to the market.

   d) A single reported ADR from a practitioner would not help to identify that a specific drug may produce toxicity.

   e) There is a higher rate of ADR reporting from physicians than pharmacists.

6. Grapefruit juice inhibits which cytochrome P450?

   a) CYP 1A2

   b) CYP 2C19a

   c) CYP 2D6

   d) CYP 2E1

   **e) CYP 3A**

7. St. Johns Wort primarily induces which cytochrome P450?

   a) CYP 1A2

   b) CYP 2C19

   c) CYP 2D6

   d) CYP 2E1

   **e) CYP 3A**

8. Fluoxetine (Prozac) increases the anticoagulant effect of warfarin by what mechanism?

   **a) Fluoxetine inhibits CYP 2C9 resulting in inhibition of warfarin metabolism and increased anticoagulant effect.**

   b) Fluoxetine displaces protein bound warfarin, increasing free levels and anticoagulant effect of the active form.

   c) Fluoxetine increases the absorption of warfarin from the gastrointestinal tract by inhibiting gastrointestinal CYP 3A.

   d) Fluoxetine decreases available vitamin K in the liver and indirectly decrease coagulation pathway factors.

   e) Fluoxetine interacts with prothrombin time testing and falsely elevates PT and INR.

9. Which of the following statements about CYP 2D6 is true?

   a) CYP 2D6 is absent in 1% of Caucasians

   **b) CYP 2D6 is absent in 7% of Caucasians**

   c) CYP 2D6 is absent in 7% of African-Americans

   d) CYP 2D6 is absent in 15-30% of Asians

   e) CYP 2D6 is absent in 7% of Hispanics.