

**QUESTIONS ON THE PRESENTATION****“Risperidone Case 2 Genetics” (1-15-16)**

**Please select the single best choice.**

1. With 6 mg/day of risperidone, the steady state serum concentrations are 27 ng/ml for risperidone (R) and 8 ng/ml for 9-hydroxyrisperidone (9-OHR). What is the R/9-OHR ratio and what does it mean?
  - A.  $6/8 = 0.75$ ; the patient is an ultrarapid metabolizer of risperidone.
  - B.  $27/8 = 3.4$ ; the patient is a poor metabolizer of risperidone.
  - C.  $27/8 = 3.4$ ; the patient is an ultrarapid metabolizer of risperidone.
  - D.  $6/8 = 0.75$ ; the patient is a poor metabolizer of risperidone.
  
2. The C/D ratio represents:
  - A. The estimation of medication clearance once a steady state has been reached.
  - B. A measure of medication effects on a patient.
  - C. The potency of a drug at its receptor.
  - D. All of the above are correct.
  
3. A patient undergoes genetic testing for the CYP2D6 enzyme and is found to have no active allele for the CYP2D6 gene. What type of metabolizer are they and what would you expect their R/9-OHR ratio to be?
  - A. Poor metabolizer, R/9-OHR ratio  $>1$ .
  - B. Intermediate metabolizer, R/9-OHR ratio  $<1$ .
  - C. Extensive metabolizer, R/9-OHR ratio  $<1$ .
  - D. Ultrarapid metabolizer, R/9-OHR ratio  $>1$ .
  
4. The effect of risperidone on brain receptors is an example of pharmacodynamics.
  - A. True
  - B. False

5. A patient is taking 6 mg/day of risperidone (R) and he is having increased somnolence. His serum risperidone concentration is 75 ng/ml and his 9-hydroxyrisperidone (9-OHR) concentration is 30 ng/ml. His total risperidone concentration by adding R and 9-OHR is 105 ng/ml. His R/9-OHR ratio is 2.5 (75/30). His C/D ratio is 17.5 (105/6). Which of the following would be an acceptable next step in his care?

- A. Decrease his dose to 2 mg/day and remeasure blood levels.
- B. Stop risperidone and change to a different medication.
- C. Perform genetic testing to determine CYP2D6 genotype.
- D. All of the above may be correct.

6. A patient is on risperidone and an additional medication that inhibits the CYP2D6 enzyme. Which of the following is true?

- A. Removal of the CYP2D6 inhibitor will increase the R/9OHR ratio.
- B. Removal of the CYP2D6 inhibitor will not change the R/9OHR ratio.
- C. Removal of the CYP2D6 inhibitor will decrease the R/9OHR ratio.
- D. None of the above is correct.

7. Regarding risperidone metabolism:

- A. CYP2D6 is the only clinically relevant CYP isoenzyme.
- B. Carbamazepine induces CYP2D6.
- C. CYP3A4 inducers or inhibitors are not important.
- D. None of the above is correct.

8. "Risperidone follows linear kinetics" means:

- A. There is a linear relationship between risperidone dose (D) and concentration (C).
- B. The ratio between C and D can be represented by a straight line.
- C. If the D increases by two times, the C increases by two times.
- D. All of the above are correct.

9. Regarding risperidone therapeutic drug monitoring:

- A. The total concentration is calculated by adding serum risperidone (R) and 9-hydroxyrisperidone (9-OHR) concentrations.
- B. Risperidone (R) and 9-hydroxyrisperidone (9-OHR) concentrations are described by the manufacturer as equally potent.
- C. It can be used to explore risperidone metabolism in one patient.
- D. All of the above are correct.

10. With 5 mg/day of risperidone, the steady state serum concentrations are 3 ng/ml for risperidone (R) and 32 ng/ml for 9-hydroxyrisperidone (9-OHR). The C/D ratio is:

- A. 5.
- B.  $5/35=0.14$ .
- C.  $3+32/5=7$ .
- D.  $5/3=1.66$ .