Clinical Reasoning Practice Questions

Adapted from Nelson, Adin.  *MedEdPORTAL* 14 (2018).

1. The Positive Predictive Value (PPV) of a test refers to which of the following?
   1. The proportion of patients with disease who test positive
   2. The proportion of patients with a negative test who do not have the disease
   3. The proportion of patients with a positive test who have the disease
   4. The proportion of patients without disease who test negative
2. Based on this table, what is the sensitivity of the Prostate Specific Antigen (PSA) for detecting prostate cancer?

|  |  |  |  |
| --- | --- | --- | --- |
|  | # men **with** prostate cancer | # men **without** prostate cancer | total |
| # men with **positive** PSA | 160 | 6,860 | 7,020 |
| # men with **negative** PSA | 40 | 2,940 | 2,980 |
| total | 200 | 9,800 | 10,000 |

* 1. 160/200
  2. 200/10,000
  3. 6,860/9,800
  4. 160/7,020

1. A new diagnostic test is investigated in a sample of 1000 individuals of whom 500 have the disease. The test yields 400 positive results in individuals with the disease and 30 positive results in those without. What is the specificity of the test?
   1. 400 / 430
   2. 470 / 500
   3. 400 / 500
   4. 470 / 570
2. Which of the following depends on the prevalence of the disease?
   1. Positive predictive value
   2. Sensitivity
   3. Specificity
   4. Reliability of the test
3. A low pretest probability of disease is most likely to lead to which of the following?
   1. Low negative predictive value and more false negative results
   2. Low positive predictive value and more false positive results
   3. Low sensitivity and more false negative results
   4. Low specificity and more false positive results
4. If you have a high suspicion for a specific condition but the patient tests negative, the negative result is likely to be:
   1. True negative because of a low negative predictive value
   2. True negative because of a high negative predictive value
   3. False negative because of a low negative predictive value
   4. False negative because of a high negative predictive value
5. A patient has a positive rapid strep test. Knowing nothing else, what is *your* *best guess* as to the likelihood that the patient has strep pharyngitis?
   1. 75%
   2. 85%
   3. 95%
   4. Cannot be determined from this information
6. You are evaluating a patient with abdominal pain, and you think there is a 60% chance that it is appendicitis. You order an abdominal ultrasound (which you know from QI data has 80% sensitivity and 80% specificity in your hospital), and the ultrasound is positive. Taking into account the positive ultrasound, how likely do you now think it is that the patient has appendicitis?
   1. 5/7 (~70%)
   2. 4/5 (~80%)
   3. 6/7 (~85%)
   4. 9/10 (~90%)