# Response to Multiple Choice Question

## Answer: (B) Invalid.

### Explanation:

This interpretation is invalid. A p-value of 0.04 does not represent the probability that the drug is effective.

The p-value actually represents the probability of observing data as extreme or more extreme than what was observed in the study, assuming that the null hypothesis is true (typically that there is no effect or no difference).

In this context, a p-value of 0.04 means that if the drug truly had no effect on vision loss in people with Macular Degeneration (null hypothesis), then the probability of observing the results found in the study (or more extreme results) would be 4%.

The p-value does not directly tell us the probability that the drug works. This is a common misinterpretation of p-values. The effectiveness of the drug is not a random variable that has a probability - the drug either is effective or it isn't. The p-value is about the probability of the observed data under a specific hypothesis, not about the probability of the hypothesis itself.

To make statements about the probability that the drug is effective, one would need to use Bayesian statistical methods that incorporate prior probabilities.