Biostatistics

In-class exercise week 4
Topic: hypothesis tests, p-value

Which of the following statements are correct?

a) With a sample of size 10, the t-test should only be carried out if the observations in the sample are normally distribution.

□ True □ False

b) When using a t-test for detecting an existing effect, it helps to work with a large sample.

□ True □ False

c) If a test does not get significant, one can conclude that there is no effect.

□ True □ False

d) Two 99% CIs for the population mean are determined from two independent samples. If the two confidence intervals do not overlap, then a two-sample t-test will provide a p-value ≤ 2%.

□ True □ False

Interpretation of the p-value

In a clinical trial 465 patients were treated with interferon (a protein) and 462 patients were treated with placebo.

A suitable and correctly applied test yields as result that the treatment effect of interferon is larger than the placebo effect (p-value = 0.02).

a) For 2% of patients, Interferon didn't have a better effect than placebo.

□ True □ False

b) Interferon yields a relevant improvement.

□ True □ False

c) Interferon gives for 98% of the patients a clinically relevant positive effect.

□ True □ False

d) There is evidence for a superior interferon effect (at significance level 5%).

□ True □ False