

MATERIAL SUPLEMENTARIO

Cálculo de número de pacientes

To calculate the number of patients with *H. pylori* infection to treat, we can use the formula for sample size calculation in a two-sample proportion test with a significance level (α) of 0.05, power of 90%, and a desired effect size of 20% difference between therapies.

Effect size (ES)=

$$ES = \frac{p_1 - p_2}{\sqrt{\frac{p_1(1-p_1)}{n_1} + \frac{p_2(1-p_2)}{n_2}}}$$

where p_1 and p_2 are the proportions of success in the two groups.

Number of patients per group (n):

$$\frac{2(Z_{1-\alpha/2} + Z_{1-\beta})^2}{ES^2}$$

where $Z_{1-\alpha/2}$ and $Z_{1-\beta}$ are the z-scores corresponding to the chosen α and power values.

Using a baseline prevalence of 50% and an effect size of 20%:

$$p_1 = 0.5$$

$$p_2 = 0.7$$

Z-scores: For a two-tailed test with $\alpha = 0.05$ and power = 0.90, $Z_{1-\alpha/2} = 1.96$ and $Z_{1-\beta} = 1.28$.

Substitute values into the formula to find the sample size in each group.

Calculate the total sample size by multiplying by two.

Total Sample Size Calculation:

$$n_{total} = 2 \times \left(\frac{2(1.96 + 1.28)^2}{\left(\frac{0.7 - 0.5}{\sqrt{\frac{0.5 \times (1 - 0.5)}{n}}} \right)^2} \right)$$

Resultados:

Total sample size needed: Approximately 103 patients per group, considering a 20% difference between therapies, a 50% baseline prevalence, a significance level (α) of 0.05 for two tails, and a power of 90%.