

Homework 2

To submit via e-mail by h 14:00, May 31

(Original study) In late February 2003, the world heard preliminary results of the first large scale human trial of a vaccine designed to prevent HIV infection. A clinical trial was conducted among 5009 people. Of those, one-third got a placebo (an inactive substance), and two-thirds got the AIDSVAX vaccine. The main goal was to see if the vaccine actually offered any protection from HIV infection. Below the results:

Placebo (Infections/Total): 98/1679

Vaccine (Infections/Total): 191/3330

Define the statistical model, the null hypothesis and an appropriate statistical test. Compute the p -value and discuss briefly the result.

(VaxGen analysis) The original study was not designed to determine whether the vaccine was efficacious in any subgroup. However, VaxGen, the vaccine's maker, presented its analysis of subgroup data:

- White & Hispanic

Placebo (Infections/Total): 81/1508

Vaccine (Infections/Total): 179/3003

- Black - Asian/Pacific Islanders - Other

Placebo (Infections/Total): 17/171

Vaccine (Infections/Total): 12/327

- Black

Placebo (Infections/Total): 9/111

Vaccine (Infections/Total): 4/203

- Asian/Pacific Islanders

Placebo (Infections/Total): 2/20

Vaccine (Infections/Total): 2/53

- Other

Placebo (Infections/Total): 6/40

Vaccine (Infections/Total): 6/71

VaxGen said its analysis showed “a statistically significant reduction of HIV infection in certain racial groups”. What is *your* conclusion?