Course 607 - Final 1986 Take home portion

Refer to the article by Leitman et al. "Allergic reactions in healthy plateletpheresis donors caused by sensitization to ethylene oxide gas".

Results: Reactions during Plateletpheresis.

a. Assuming that the first 600 are representative of "donors elsewhere", what percentage of "donors elsewhere" should have reactions with the use of the CS-3000 cell separator?

b. How would you have summarized the data from the six donors with reactions on how many times before they had donated with manual techniques?

c. How would you formally compare the number of reactions among the 300 contemporaneous users of the V-50 device with the number among the 600?

d. From the previous 10 years of data, what is an upper confidence limit on the frequency of such reactions with manual plateletpheresis using the Fenwal 4R3945 sets?

General.

a What is a suitable name for the design of this study?

Results: Skin Testing.

a. What is the conventional (epidemiologic) tabular display for the data given in the first sentence of this paragraph ("Four of the six donors..")?

b. What null hypothesis is implied in the comparison in this first sentence?

c. What statistical test can one use to formally test it?

d. What null hypothesis is implied in the comparison of the six with the two groups of twenty (last sentence)?

e. What statistical test does one use to formally test it?

Results: Ethylene Oxide-Albumin RAST.

a. What null hypothesis is implied in the comparison in the second sentence ("Serum samples from four...")?

b. What statistical test do you think the authors used to formally test it?

c. What statistical test would you recommend to formally test it?

Results: Basophil histamine Release.

a. What null hypothesis is implied in the comparison in the second and third sentences ("Basophils from all six..." & "This was significantly ...")?

b. What statistical test do you think the authors used to formally test it?

c. What statistical test would you recommend to formally test it?

d. What null hypothesis is implied in the comparison in the last sentence of the first paragraph ("Ethylene oxide-albumin did not cause...")?

e. What statistical test do you think the authors used to formally test it?

f. What null hypothesis is implied in the comparison in the second paragraph ("Anti-IgE-induced histamine ...")?

g. What statistical test would you recommend to formally test it?

h. How could the "error-bars" in Figure 2 be used as visual tests of significance?

Discussion: Second last paragraph.

a. What numbers from the study were used to say that "the predictive value of a negative (ETO-HSA) skin test was 100 percent"?

b. What data do the authors provide about the value of a positive (ETO-HSA) skin test?

c. Why do they say that their "data do not permit conclusions" about it?

b. What null hypothesis is implied in the comparison in this first sentence?

c. Whc\àn one use to formally test it?

d. What null hypothesis is implied in the comparison of the six with the t