Biostatistics

Report 14 – 2nd Semester 2022/2023 Deadline: 28/05/2023

Description: Primary biliary cirrhosis is a rare but fatal chronic liver disease of unknown cause, with a prevalence of about 50-cases-per-million population. The primary pathologic event appears to be the destruction of interlobular bile ducts, which may be mediated by immunologic mechanisms. Between January, 1974 and May, 1984, the Mayo Clinic conducted a double-blinded randomized trial in primary biliary cirrhosis of the liver, comparing the drug D-penicillamine (DPCA) with a placebo. There were 424 patients who met the eligibility criteria seen at the Clinic while the trial was open for patient registration.

Main objective: To investigate the relationship between the survival time and the set of the observed risk factors. Suggestion: initially analyze all patients who died and compare the results with those of the compatible model of survival with all patients.

Variable name	Description
ID	Case number
TIME	Number of days between registration and the earlier of death, liver transplantion, or study analysis time in July, 1986
CEN	Status: 0=censored, 1=death
DRUG	Drug: 1=D-penicillamine, 2=placebo
AGE	Age in days
ASI	Presence of asictes: 0=no 1=yes
HEP	Presence of hepatomegaly: 0=no 1=yes
SERUM	Serum cholesterol in mg/dl

Perform a thorough statistical analysis of the data, selecting a log-normal regression model and interpreting the associated results with respect to the study objectives.

Data file: DatasetM.txt

Reference: Fleming, T. and Harrington, D. (1991). Counting Processes and Survival Analysis, John Wiley and Sons.