A screenshot of a computer

Description automatically generated

Based on the JMP output provided, cell type appears to have a significant effect on the survival of patients with lung cancer. The survival plot demonstrates distinct survival experiences for each cell type. Patients with ‘Squamous’ cell type exhibit the longest survival, with a median time of 118 months and a mean survival time of 230.225 months. This indicates that more than half of ‘Squamous’ patients survived beyond 50 months and on average, these patients had a longer survival time compared to other groups. Also, this group had the second highest median time compared to other groups. This means that Squamous group had one of the longest survival periods of 118 months.

In contrast, patients with ‘Small’ and ‘Combined’ cell types have a substantially shorter median survival time of only 51 and 80 months and a mean survival time of 78.98 and 132.77months, indicating a steeper decline in their survival probability over time. This difference may be partly attributed to the higher standard error in this group, suggesting a wider variability in survival times.

The ‘Large’ cell type fall in between, with ‘Large’ cell type patients having a median survival time of 156 months and a mean survival time of 170.506 months, while ‘Adeno’ patients have a median of 51 months and a mean of 65.55 months. Notably, the 'Small' cell type has the lowest 25% percentile survival time of 20 months, indicating that a quarter of patients with this cell type survived less than 6 months.

A screenshot of a computer screen

Description automatically generated

Looking at the Hazard Ratio for cell types we see that cell type Adeno and Squamous have a higher Hazard ratio, this means that the chance of them dying would be greater than other cell type combinations. The cell type that has a higher chance of dying would be small and squamous with a hazard ratio of 2.35, followed by Adeno and large with a value of 2.20. Although based of the chi-square values, the probability of cell types from dying are less likely when compared to other chi-square values. The cell types “Adeno and Squamous” have the lowest chi-square value compared to the other 2 groups.

For the hazard Ratio for prior we see that cell type with “yes and No” for level 1 and level 2, have a higher hazard value when compared to the other one, this means that people that had the lung cancer disease before the treatment, will have a higher chance of dying when compared to others that did not have lung cancer historically in their generation. This could also mean that the group of people that did not receive any other treatments for lung cancer prior to this certain treatment have a higher chance of dying, when compared to the other group that had gone through some sort of treatment before attending this treatment.

For the Hazard ratio for treatment, we see that people in the first group have a higher chance of dying from lung cancer compared to the second group. People that receive the standard lung cancer treatment has a higher chance of dying from the disease compared to the control group that received the “Test” treatment.