Intro → Marginal Cox PH

With the clinical context established and the relevant covariates explained, we begin to evaluate the effects of treatment and other factors on the patient. Given that our dataset includes two types of events — recurrence of cancer and death — we begin by modeling these outcomes separately using marginal Cox proportional hazards models. This allows us to estimate the hazard associated with each covariate for each event type independently and by fitting separate Cox models for recurrence and death, we can assess whether specific treatments or patient characteristics are associated with an increased or decreased risk for each type of event.

Conclusion[Marginal Models] → Advanced Model

The results from the marginal Cox proportional hazards models revealed that the combination treatment of Levamisole and 5-Fluorouracil (*Lev+5FU*) was significantly associated with reduced hazard for both recurrence and death. Additionally, time from initial surgery(*surg)*, level of tumor spread(*extent)*, and whether or not patients had more than four positive lymph nodes(*node4*) were important covariates associated with recurrence and death. While these findings help us determine the overall effects of covariates on each event, they fail in considering the possibility of recurrence happening before death or how the risk may change over time. Therefore, we utilize a counting process model, which allows for multiple time intervals for each patient and enables us to model recurrence and death in the same dataset.