

Joint modeling of longitudinal categorical data and survival data

by

Jianwen Cai

University of North Carolina at Chapel Hill

Department of Biostatistics

Chapel Hill, NC 27599-7420, USA

`cai@bios.unc.edu`

Abstract

In many biomedical studies, it is of interest to study the covariate effect on both longitudinal categorical outcomes and survival outcomes. For example, in cancer research, it is of interest to study the treatment effect on both quality of life which is a categorical outcome measured longitudinally and survival time. In this talk, we will discuss such joint models. Random effects are introduced into the simultaneous models to account for dependence between longitudinal categorical outcome and survival time due to unobserved factors. EM algorithms are used to derive the point estimates for the parameters in the proposed model and profile likelihood function is used to estimate their variances. The asymptotic properties are established for our proposed estimators. Finally, simulation studies are conducted to examine the finite-sample properties of the proposed estimators and a liver transplantation data set is analyzed to illustrate our approaches.

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