TIME PROFILE MIXTURE MODEL FOR LONGITUDINAL COUNT DATA

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Mixed effect models are commonly used for longitudinal data from clinical studies where the between-subject heterogeneity is represented by random effect terms. When the distributional assumption for this heterogeneity is wrong, however, the control of type 1 error rate in testing treatment effect tends to become worse, therefore research for some alternative approach is warranted.

Tango (1989) proposed a time profile mixture model for the analysis of longitudinal data, which assume latent subclasses in terms of the patient response profile. The probabilities of belonging to each subclass can be modelled by proportional odds model, whose linear predictor may include terms for treatment indicator and other covariates of interest (Taguchi and Tango, 2008). We consider applying this method for the analysis of count data, assuming that the patient heterogeneity emerges both in terms of the patient background and the time course after starting treatment. The new method is compared with mixed effect models with discrete or log-normal random effect regarding the post-treatment change (Uehara and Tango, 2008).

References

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