Empirical Likelihood Confidence Interval for Ratio of Hazard Rates

by

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Abstract

In clinical trials with time to event outcome, hazard ratio is one of the most frequently used measurements to quantify the potential difference between treatment groups. Recently, Tu (2007) proposed some nonparametric methods to construct confidence intervals for time-dependent hazard ratio based on kernel estimates of hazard rates with an under-smoothing bandwidth derived by Cheng, Hall and Tu (2006). In this talk, the empirical likelihood method is used to derive an alternative confidence interval for the hazard ratio. The asymptotic properties of this empirical likelihood confidence interval are investigated. The coverage probability and length of the proposed procedure are compared with that of the procedure proposed by Tu (2007) through simulations.

This is joint work with Shan Jiang.