Empirical likelihood for additive hazards regression model with case II interval censored failure time data

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Abstract: Interval censored failure time data occur in many areas. Many approaches have been proposed under various hazards regression models based on the asymptotic normality in survival statistics studies. We proposed an empirical likelihood approach for an additive hazards model with case II interval censored failure time data. For a vector of regression parameters, an empirical log-likelihood ratio is defined and it is shown its limiting distribution is a standard chi-squared distribution. Finite sample performance of our proposed empirical likelihood approach are demonstrated by simulation studies, and it shows that the empirical likelihood method provides more accurate inference than the normal approximation method. Empirical likelihood appraoch is applied to analyzing a real study of the breast cancer data.