

Non-parametric maximum likelihood estimation of cure fraction for interval survival data.

ABSTRACT

In cancer clinical trials, a significant fraction of patients can be cured, that is, the symptoms of the disease are completely eliminated, so that it will never recur. In this article the focus is on the estimation of the proportion of patients who are cured. The Nonparametric maximum likelihood estimation method is used for interval censored data based on the bounded cumulative hazard (BCH) model. We implement the Turnbull algorithm for the survival function estimation using EM algorithm. The analysis shows the analytical solution of the estimating equations for the cure proportion followed by a simulation study.

Keyword: Cure fraction; Interval censoring; Turnbull estimator; EM algorithm; BCH model.