
Test for informative cluster size with right censored survival data

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Abstract

Clustered survival data often arise in biomedical research. When the outcome depends on the size of the cluster, the cluster size is said to be informative. The assumption of non informative cluster size is commonly used even though it may be not true in some situations. We propose a test for the assumption of Informative Cluster Size (ICS) in clustered survival data with right censoring. Standard martingale results are used to obtain the asymptotic distribution of the test statistic. Simulation studies show that the proposed test works well under various scenario. To illustrate the proposed approach, we consider several applications: periodontal data, a multicentric study of patients with liver disease and a recent data set of patients with metastatic cancer treated by immunotherapy.

KEYWORDS:

Clustered data, Hypothesis testing, Informative cluster size, Survival analysis

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