Weighted Two-sample Test for Comparing Subdistribution Function of a Competing Risk

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Abstract

The problem of testing for differences between two groups with respect to multiple competing risk time-to-event endpoints is considered A class of two-sample test is proposed for comparing the subdistribution of a particular type of failures. The test is based on comparing the weighted average of subdistribution functions without making any assumption on the nature of dependence among the risks. The weight function has been chosen so that the test is distribution-free in the sense that asymptotically valid test can be performed without assumption regarding the underlying survival and censoring distribution. Both theoretical result and simulation evidence show that the proposed method attains the nominal level. We also apply the test to real data.

Key words: Competing risks, subdistribution function, two-sample statistic