
On the detection of late effects using Fleming-Harrington's class of tests

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Résumé

The so-called logrank test is optimal for testing equality of censored survival distributions against a proportional hazards alternative. Under a late effects alternative, it is no longer appropriate, and one may turn to Fleming–Harrington's class of weighted logrank tests instead. In some settings, such as in preventive clinical trials, where the statistical analysis has to be designed before the trial begins, it can be difficult to choose a priori between logrank and Fleming–Harrington tests. We discuss this issue with respect to the notion of asymptotic relative efficiency. Then, we construct a new test statistic for dealing with the problem of testing the equality of two survival distributions when the expected alternative may be one of the proportional hazards and late effects. A comprehensive simulation study is conducted to assess finite sample properties of this test. The proposed test improves both the logrank test and Fleming–Harrington's test for late effects. Finally, the methodology is illustrated on a data set in the field of prevention of Alzheimer's disease. This is a joint work with Andrieu S., Garès V., Savy N. (Toulouse)"

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