

Package ‘powerCompRisk’

July 23, 2025

Type Package

Title Power Analysis Tool for Joint Testing Hazards with Competing Risks Data

Version 1.0.1

Date 2018-06-15

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Depends R (>= 3.1.0), mvtnorm, stats

Description A power analysis tool for jointly testing the cause-1 cause-specific hazard and the any-cause hazard with competing risks data.

License GPL-2

Encoding UTF-8

LazyData true

RoxygenNote 6.0.1

NeedsCompilation no

Repository CRAN

Date/Publication 2018-06-05 21:24:38 UTC

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Description

Power Analysis Tool for Joint Testing Hazards with Competing Risks Data.

Usage

```
powerCompRisk(alpha, beta, lambda_11, RR, HR_1, HR_all, attrition, r, f, a1)
```

Arguments

alpha	Type I error.
beta	Type II error.
lambda_11	Cause-1 cause-specific hazard in group 1.
RR	Relative risk of cause-1 failure versus the any-cause failure in group 1.
HR_1	Pre-specified cause-1 cause-specific hazard ratio between groups 1 and 2.
HR_all	Pre-specified any-cause hazard ratio between groups 1 and 2.
attrition	Attrition rate due to lost to follow-up.
r	Length of patient accrual period.
f	Maximum follow-up period.
a1	Sample allocation proportion for group 1.

Value

A dataframe with variables Chi2 Joint, Maximum Joint, Bonferroni methods. The first entry is the required number of cause-1 failures and the second entry is the required total number of patients.

References

Yang, Q., Fung, W.K., Li, G. (2017) Sample size determination for jointly testing a cause-specific hazard and the any-cause hazard in the presence of competing risks. UCLA Department of Biostatistics Technical Report.

Examples

```
library(powerCompRisk)
powerCompRisk(alpha = 0.05, beta = 0.2, lambda_11 = 0.3, RR = 0.8,
HR_1 = 1.44, HR_all = 1.33, attrition = 0.1, r = 1, f = 8, a1 = 0.5)
```

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