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Abstract:

A signed-rank test for clustered data. We consider the problem of comparing two outcome measures when the pairs are clustered. Using the general principle of within cluster resampling, we obtain a novel signed rank test for clustered paired data. We show by a simple informative cluster size simulation model that only our test maintains the correct size under the null hypothesis of marginal symmetry compared to four other existing signed rank tests; further, our test has adequate power when cluster size is non-informative. Applications of our method to testing for linkage and association in discordant sib data and radiation toxicity are also presented.

KEY WORDS: Clustered data; Paired comparison; Sign test; Signed rank test; Linkage; Association.

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