Unbiased estimation after phase II clinical trials involving multiple endpoints

The single arm, two-stage clinical trial design is a popular methodology to evaluate oncology treatments in the phase II setting. The designs are typically augmented with an ad hoc toxicity monitoring rule which is imposed outside of the formal two-stage design but there are also several designs that formally incorporate both endpoints simultaneously. There are many problems that prevent the designs from being used in practice which includes point estimation after the execution of the study. We will examine an unbiased estimator that accounts for both endpoints simultaneously along with the correlation between the endpoints. The behavior of the estimate is examined through simulation studies. It is compared to the maximum likelihood estimator.

Biography

Herman Ray has received his PhD from the University of Louisville, where he has conducted research at the JG Brown Cancer Center. He currently has several manuscripts published in clinical trial design and bioinformatics as well as STEM education policy in the secondary education system. He is now an Associate Professor of Statistics at Kennesaw State University as well as the Director of the Center for Statistics and Analytical Research which is housed within the new Analytics and Data Science Institute.

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