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Optimal sample size allocation with financial constraint

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Abstract

Financial resources have always been a key factor in scientific studies. Financial constraint has become a burden for carrying out our research and we often face budget cut in clinical trials. Therefore it is crucial to achieve maximal power with limited financial resources in clinical trials. There are a lot of publications about this area. Our focus in this paper is about optimal sample size allocation with financial constraints. For simplicity our discussion is restricted to the comparison of two groups. But the methods can be generalized to multiple comparisons. We study two types of optimal sample size allocation under the financial constraint: (a) maximize power for detecting the difference of two sample means, two proportions, two survival rates and two correlations, (b) minimize the variance of the difference of two sample means and the variance of the ratio of two sample means.

Biography

Jiangtao Luo completed his Ph.D at The University of Florida and postdoctoral studies Penn State Medical University. He is an assistant professor at University of Nebraska medical Center. He has published more than 20 peer reviewed papers in reputed journals.