

RESPONSE ADAPTIVE RANDOMIZATION IN THE PRESENCE OF MISMEASUREMENT

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Response adaptive randomization represents a major advance in clinical trial methodology that helps balance the benefits of the collective and the benefits of the individual and improves efficiency without undermining the validity and integrity of the clinical research. Response adaptive designs use information so far accumulated from the trial to modify the randomization procedure and deliberately bias treatment allocation in order to assign more patients to the potentially better treatment. Some important issues and methods of response adaptive design of clinical trials in the presence of mismeasurement will be presented in this talk. We formulate response adaptive designs when the responses may be imperfectly measured. We consider the optimal allocations under various objectives, investigate the asymptotically best response adaptive randomization procedure, and discuss mismeasurement effects on the optimal allocation. We also derive explicit expressions for the variance-penalized criterion with imperfectly responses and propose new target proportions of treatment allocation under the criterion.