Optimal designs for dose response curves with common parameters

C. FELLER, K. SCHORNING, H. DETTE, G. BERMANN, B BORNKAMP

Novartis Pharma AG

Abstract

A common problem in Phase II clinical trials is the estimation of dose-response curves. Typically the effect of the dose levels is described by parametric regression models. When treatment groups differ not only in terms of dose, but also in other aspects of the administration (e.g. frequency), it can make sense to assume that the same dose-response model holds overall, but some dose-response model parameters are shared while others are not shared between the different groups. In this talk we present results from optimal design theory for regression models with common parameters. We derive upper bounds on the number of support points of admissible designs. Explicit expressions for D-optimal designs are derived for specific situations. The results are illustrated by an application.