Model selection in Bayesian survival analysis for a multi-country cluster randomized trial

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The Deviance Information Criterion (DIC) is a Bayesian model selection criterion proposed by Spiegelhalter *et al.* (2002) and studied by Celeux *et al.* (2006) for missing data problem including random effects. We propose the modified DICs for the frailty and evaluate their performance by simulation. For priors, we use gamma distribution for the frailty and Bayesian bootstrap prior for the baseline hazard function. An intensive simulation study is performed to compare two DICs, complete and conditional DICs. We illustrated with data of multi-country cluster randomized trials (CRT) conducted by International Vaccine Institute (IVI).

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