

META-ANALYSIS AND SENSITIVITY ANALYSIS FOR SELECTION BIAS IN MULTI-ARM TRIALS

Hathaikan Chootrakool and Jian Qing Shi

University of Newcastle, United Kingdom

In multi-arm trials, more than two treatments are (usually) compared. The aim of meta-analysis for multi-arm trials is to combine evidences from all possible similar studies. We propose a meta-analysis method to compare different treatments in multi-arm trials, allowing studies of both direct and indirect comparisons. A hierarchical structure is introduced in the model to address the problem of heterogeneity among different studies. An important concern of meta-analysis is the selection of studies: it has long been accepted that studies with statistically significant results (or positive outcome) are potentially more likely to be selected or published more rapidly than studies with non-significant results (or negative results). This problem leads to a selection bias, a major problem in meta-analysis. We use a selection model to conduct a sensitivity analysis comparing the range of inferences of multi-arm trials model.