

## **Allowing for uncertainty due to missing data in a binary meta-analysis.**

### **Better than best/worst case analysis?**

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**Objective:** To incorporate into binary meta-analysis the uncertainty due to missing outcome data in the contributing trials.

**Methods:** We propose a method using pooled uncertainty intervals, which incorporates both sampling error and the potential impact of missing data. This is compared to complete case analysis and best-worst case analysis. The methods are illustrated using a review of anti-malarial treatments. Simulation studies with varying amounts of missing data and varying amounts of bias in the missing data are used to investigate the appropriateness of the different methods.

**Results:** If data are not missing randomly then complete case analysis gives biased confidence intervals. Best-worst case and the uncertainty method produce wider intervals that avoid bias in interpretation. Using simulation studies, we demonstrate that the uncertainty method consistently has better power and narrower interval widths than the best-worst case method.

**Conclusions:** If data cannot be assumed to be missing randomly then the uncertainty method performs better than complete case or best/worst case methods. This method can be implemented in RevMan version 4.2.