

ADDIS: Aggregate Data Drug Information System for drug benefit-risk analysis and automated evidence synthesis

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Abstract

Clinical trials are the main indicator for efficacy and safety of medical treatments. Although they are of pivotal importance especially in evidence-based medicine, there is a lack of usable information systems providing data analysis and decision support capabilities for aggregate results of clinical trials. In order to implement useful analyses in a usable software tool, we need a minimal data model for enabling semi-automated model generation. In this presentation I describe the open source Aggregate Data Drug Information System. ADDIS implements the aforementioned minimal data model, methods for evidence synthesis (pairwise- and mixed treatment comparison models) and semi-automated multi-criteria benefit-risk analysis (through stochastic multicriteria acceptability analysis). I demonstrate the usability of ADDIS by analysing the comparative benefit-risk profiles of 10 second-generation antidepressants.

Keywords: Medical informatics; Clinical trial; Evidence-based medicine; Benefit-Risk analysis; Decision support systems

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