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

*This work has been funded within the work package 3.2 of Project Escher, Dutch Top Institute Pharma. ADDIS is developed by the author together with Gert van Valkenhoef (RuG.nl/UMCG.nl), Tijs Zwinkels (RuG.nl), Hanno Koeslag (RuG.nl) and Maarten Jacobs (RuG.nl). The theoretical advances were achieved in collaboration with Gert van Valkenhoef, Hans Hillege (UMCG.nl), Bert de Brock (RuG.nl), Douwe Postmus (UMCG.nl), and Jing Zhao (KTH.se).