Risk of bias assessment in preclinical research supporting clinical practice

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Background: Our knowledge about long-term effects from using psychotropic drugs is sparse, as most research is short-term. It is crucial to focus on the long-term impact, especially regarding harm, as more and more children and adults are prescribed psychotropic drugs.

Objective: To assess risk of bias when investigating persistent changes (assessments performed at least 90 days after last dose) in behaviour of mammals after earlier exposure to psychotropic drugs. Outcomes were observed changes in social interactions, memory, cognition, and mood.

Methods: We identified 5647 records through searches in PubMed and Embase and ultimately extracted data from 30 original papers for data analysis (publication years 1981-2014). Two data assessors extracted data and risk of bias as advised by SYRCLE™.

Results: Nine of the 30 included studies (30%) had a high or unclear risk of selective reporting; of 168 outcomes mentioned, data was only provided for 130 (77%). Only six studies (20%) gave adequate information on the randomization process, leaving 24 studies at high or unclear risk of bias, also regarding the order of outcome assessment. For fifteen studies (50%), blinding of outcome assessors was judged to be at high or unclear risk of bias, whereas risk was high or unclear on blinded caregivers and researchers in all studies.

Limitations: The included studies were highly heterogeneous (species, strains, treatment period, interventional drug, choice of outcomes), though this does not influence risk of bias assessment.

Conclusions: The methodology of preclinical research in this area is generally poor or has been poorly reported.