Synthesis of evidence in laboratory animal research

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In this position statement, NCad describes the use of various Synthesis of Evidence (SoE) methods in planning and conducting laboratory animal research and the contribution of these methods to 3Rs policy. According to NCad, SoE makes a crucial contribution to the quality of laboratory animal research, yet the NCad also points out that SoE can sometimes lead to an increase in the number of laboratory animals in an experiment because this improves the study design in certain situations. An analysis of many animal procedure publications does reveal, however, that there is often a lack of essential information relating to the experimental design.

SoE is considered an umbrella term for the various forms of classifying and evaluating available scientific knowledge as substantiation for a proposed animal or other procedure. Within these various forms, narrative reviews (descriptive literature reviews) are the most flexible and systematic reviews (SRs) are the most complete and time-intensive. In addition, open-access databases can be consulted with regard to the choice of animal models or 3R alternatives. Expert panels can also be used to discuss a specific scientific question.

NCad regards SoE in all its facets essential to enhance the quality of research questions and the design of laboratory animal research. The exact chosen SoE form depends on the specific research question and available knowledge. Limitations to the application of SoE are that essential information regarding the design of the procedure often lack from publications, negative results are seldom published and the results of animal procedures can not be disclosed due to professional confidentiality.

To encourage the application of SoE, NCad makes a number of recommendations to the field of biomedical research: 1) Encourage the application of a documented SoE in the design of a research project that considers the use of laboratory animals, but bear in mind that the scope and depth of the SoE depends on the available knowledge regarding the research question and the field. 2) When providing grants, the providers of those grants should promote the full spectrum of SoE, in particular also the creation and updating of relevant databases regarding the applicability of animal models. 3) Assessors of projects involving animal procedures, such as the Animal Ethics Committees (DECs), the Central Authority for Scientific Procedures on Animals (CCD), and Animal Welfare Bodies (IvDs) are advised to critically assess the application of SoEs during the assessment of projects. 4) Encourage attention and appreciation amongst researchers for the importance of publishing negative results and replications of earlier studies by, for example, incorporating this subject more firmly in training courses and in the criteria by which scientists are assessed.

NCad appointed an ad hoc expert working group at European level, comprising members from the Netherlands and other Member States, to draw up a harmonised code of practice for applying the SoE concept to the process of choosing between an animal procedure, an alternative procedure or abandoning an experiment. That code will also include issues with regard to responsible animal use.

This poster will give an overview of the advisory report by the NCad and the actions taken by the expert working group ever since.

Reference

https://english.ncadierproevenbeleid.nl/advice/documents/publications/16/7/19/soe