"Systematic reviews and meta-analyses of Animal Experimental Studies - improving research and implementing the 3 Rs?"

Within health sciences, animals are used in relation to development of pharmaceutical agents and as animal models mimicking a certain disease. Thus allowing us to deduce pathophysiological mechanisms and treatment regimes. Accordingly, preclinical animal studies are corner stones in bringing science forward. However, recently it has become apparent that these studies are challenged by a considerably poor translational success. Both in the light of the 3 R's, as well as of scientific and economic reasons this is unsatisfying and hence has led to investigations and discussions within the scientific community. The causative factor for lack of translation is multifaceted, although the lack of tradition to perform systematic reviews (SR) and meta-analyses within the field of preclinical animal studies is striking. A SR is a transparent, thorough and structured literature review focused on a single research question. It uses the same level of rigor to review research results that should be used when carrying out research projects per se. By conducting a SR, researchers are able to overview and qualify already published work as well as take basic steps to avoid obvious sources of bias in their own experiments. Thus it prompts responsible conduction of research and a more evidence-based use of animals. In conclusion, implementation of SRs and meta-analyses of preclinical studies will lead to evidence-based, high quality research as well as a beneficial implementation of the 3Rs among preclinical scientists. Consequently, this is a high priority area at the department of Clinical Medicine at Aarhus University and the most recent 3R initiative in the department. The launching of the initiative will be a symposium and workshop on how to perform SRs and meta-analyses of preclinical studies. The symposium will be joined by excellent research groups within the field and is arranged in collaboration with the Danish 3R center.