Dorothy Hegarty Award Winners 2013

The Dorothy Hegarty Award for the best article published in the 2013 ATLA has been won by Andrea Zaniboni, Augusta Zannoni, Chiara Bernardini, Cristiano Bombardi, Eraldo Seren, Monica Forni and Maria L. Bacci (Department of Veterinary Medical Sciences — DIMEVET, University of Bologna, Bologna, Italy) and Marco De Cecco (Department of Molecular Biology, Cell Biology and Biochemistry, Brown University, Providence, RI, USA). Their paper, ‘Development of a Vessel Organ Culture System: Characterisation of the Method and Implications for the Reduction of Animal Experiments’, appeared in ATLA 41, pp. 259–269.

The Award is presented annually to the author(s) of the paper published in the previous year’s volume of FRAME’s scientific journal, ATLA, which, in the opinion of the members of the Editorial Board, is likely to make the most significant contribution to the reduction, refinement and/or replacement of animal experimentation.

Each member of the ATLA Editorial Board is entitled to make up to five nominations for the Award, in rank order. As in previous years, a large variety of papers were nominated, reflecting the diversity of the work published in ATLA, and the wide range of interests of the members of the Editorial Board.

Here, the authors have summarised the importance of their paper to the progress of Three Rs:

Our research group has used the pig as a biomedical preclinical model for many years. However, the use of this species is really complex, in particular because it is less standardisable, as compared to the mouse and the rat. Despite this, the pig has a great value in preclinical studies due to its high similarity to humans (e.g. its genome, anatomy, physiology), in particular for research on cardiovascular physiopathology.

The greatest reduction in experimental animal numbers could be achieved by collecting a large amount of preliminary data from in vitro and ex vivo studies, prior to performing a preclinical in vivo study. In view of this, with a grant from Fondazione del Monte di Bologna e Ravenna, our group developed an ex vivo organ culture system of the pig aorta that could overcome some of the limitations of primary cell cultures (i.e. lack of physiological context). With this method, we aimed to study restenosis/neointimal development and formation and its molecular biology.

Our model allow researchers to study vascular processes without the sacrifice of experimental animals, because porcine aortas can be recovered at the slaughterhouse or from control animals sacrificed for other experimental purposes. We really believe that our model has contributed to an improvement in the panel of alternative methods available to study vascular physiopathology, according to the Three Rs principles.