

ASSESSING BEHAVIOUR IN RODENT MODELS OF NEUROLOGICAL DISEASES

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The use of behavioural tests has been extensively used to evaluate animal recovery during potential treatment evaluation in neurological diseases, as well as the progression of certain degenerative conditions (i.e. stroke multiple sclerosis, degenerative cervical myelopathy). Nevertheless, despite the remarkable number of researchers and the large number of papers published every year, we are failing in translate these results from animal models into humans. Regardless of the differences between humans and rodents and the complexity working in neurological diseases, one more level can be reached to overcoming this obstruction by promoting the standardization of behavioural test among different laboratories. This strategy will allow a direct comparison between the results generated by different laboratories working on the same animal model. One of the more challenging tasks in experimental stroke research is measuring long-term functional outcome in mice. It is, however, becoming more important, since transgenic mice are increasingly used for modelling human neurological disorders. Using CatWalk, we characterized long-lasting gait/locomotion deficits following mouse distal middle cerebral artery occlusion (dMCAO). The post-dMCAO assessment was performed at 7, 14, 21, and 28 days after experimental ischemia. All parameters measured in dMCAO and Sham-operated groups reached similar levels at four weeks after the experimental insult, which reflects a spontaneous post-ischemic recovery. Based on our investigation, we conclude that CatWalk represents a relevant and sensitive analysis, which allows long-term characterization of animal functional recovery in the dMCAO model of experimental ischemia.

Biography

Caballero Garrido E, is a distinguished Researcher in Biochemistry and Animal behaviour, he grew up in Madrid (Spain) and received his Bachelor's Degree in Biochemistry by the Universidad Autónoma de Madrid (Autonomous University of Madrid). Later he obtained Doctor degree from the University Miguel Hernández of Elche and joined different laboratories (both pharmaceutical and from the academic world). During those years he targeted his research on different areas. He obtained his Master's Degree in Microbiology, but completed his Doctorate in endocrinology (plasticity of the endocrine pancreas). He went to the US (to the University of New Mexico, Department of Neurosurgery) and began his research in the area of neurobiology on miRNA and cerebral microvasculature. Furthermore, he has developed several projects on animal behaviour. In parallel, he wrote various books about the history of science and developed projects of scientific outreach, both scientific programs of Radio and TV. Miguel Hernández University of Elche awarded him for his outreach projects.

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