

The Effect and Mechanisms of Electroacupuncture on Motion Sickness in Mice

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Abstract : Motion sickness (MS) is an acute disorder that occurs in healthy persons without considering gender, age or ethnicity worldwide. All signs and symptoms of MS are the results of confliction and mismatch among neural signal inputs. It is known that no singular remedy works for everybody, and electroacupuncture (EA) is one of the popular alternative therapies used for MS. Our study utilized a mouse model in order to exclude any psychological factors of MS and EA. Mice lack an emetic reflex. Therefore pica behavior, which is a normal consumption of non-nutritive substances, was found to measure the response of MS in mice. In the laboratory, Kaolin was used as a non-nutrient food substance instead of natural substances lacking nutritional value such as wood, cloth, charcoal, soil or grass. It was hypothesized that EA treatment could reduce the symptoms of MS through the TRPV1 pathways. The results of pica behavior showed a significantly increased intake of kaolin in the MS group throughout the experiment period. Moreover, the Kaolin intake of the EA group decreased to the average baseline of the control group. There was no recorded difference in the food and water intake of each group. The results indicated an increase of the TRPV1, pERK, pJNK and pmTOR protein levels in the thalamus after MS stimulation, and a significant decrease in the EA group compared with that of the control group. These findings suggest that TRPV1 pathways are associated in MS mechanisms and can be reduced by EA.

Keywords : electroacupuncture, motion sickness, Thalamus, TRPV1

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