Effects of Yinxing Mihuan Oral Solution in a Rat Model of Multiple Cerebral Infarction

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Background: To investigate the effects of Yinxin Mihuan Oral Solution (YM Oral Solution) a marketed drug for ischemic Cardio-Cerebrovascular diseases, in a rat model of multiple cerebral infarction (MCI).

Method: SD rats were randomly divided into sham group, model group, Extract of Ginkgo Biloba (EGB) group (18mg/kg), EGB group (9mg/kg), Armillaria Mellea Powder (AMP) group (600mg/kg), AMP group (300mg/kg), and YM Oral Solution groups (618mg/kg and 309mg/kg). The multiple cerebral infarction rat model was established by injection of fluorescent microsphere serous suspension into the direction of middle cerebral artery through common carotid artery. After intragastric administration for 28d, the effects of each drug on neurological function score, grasping force, concentration of serum TNF- α , level of amino acid neurotransmitters and pathomorphology in brain tissue were investigated.

Results: After administration of YM Oral Solution for 28d, the neurological function was improved, the grasping force was increased, the level of Glu and GABA in the brain and TNF- α in the serum was decreased, compared with that in the model group. According to the pathological observation, YM Oral Solution could reduce the infarct size, the disorder of the nerve cells and the infiltration of inflammatory cell in brain. Besides, the effects of YM Oral Solution on improvement of neurological function and reducing the level of Glu and GABA in the brain was superior to that in the EGB group; on grasping force was superior to that in the AMP group; and on reducing the level of TNF- α in the serum was better than both of EGB and AMP groups.

Conclusions: The YM Oral Solution could protect cerebral ischemia and improve neurological function impairment, and the combination of EGB and AMP is better than a single component, which suggests the advantages of the synergistic interaction.