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The depression-like behavioural traits of acute forced swimming and TCM Chaihu-ShuganSan-induced rapid antidepressant in female rats

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A large number of clinical data surveys have shown that women are more likely to be depressed than men. Chaihu-Shugan-San (CSS) is an classical prescriptions for treating 'liver depression and qi stagnation'. We aim to observe the effect of CSS and its Absorbed Bioactive Compounds (ABCs) on depressive behaviors, the blood oxygen level in the brain region depends on the influence of 7.0 T functional magnetic resonance imaging (BOLD-fMRI) and depressant-related biochemical indicators of acute (or chronic) stress female rats. It is interesting to note that the female rats were more easily be depressed when suffered chronic unpredictable mild stress compared with male rats ($p < 0.001$) while female rats show stronger resistance to stress during acute stress. After giving CSS (30 g/kg), the immobility time of forced swimming test was shorter than vehicle group and the movement distance was farther ($p < 0.001$). At the same time, 10 ABCs exerted anti-depressive effect similar to its parent prescription Chaihu-Shugan-San. Then we used the BOLD-fMRI technology, visually reflected the reducing of blood oxygen levels in hippocampus and thalamus in female rats after stress and the increase after giving CSS (Reho-0.005-50). This technology had great potential in the pathological localization of depression, the monitoring of depression status, the efficacy of antidepressant therapy and prognosis. Last, ELISA results shown the levels of CRH/ACTH were higher than control group while E2, DA, NE, 5-HT in serum and the BDNF and TrkB in and hippocampus were obvious decreased ($p < 0.001$). CSS and 10 ABCs could improve depressive symptoms by HPA axis/HPG axis/monoamine neurotransmitter and many other pathways. This research shown the multiple targets of CSS on female rats after suffering acute forced swimming which may help to explain the work way of TCM.

Biography

Wen Kai Wang is studying in Nanjing University of Chinese Medicine and has been in scientific research for 2 years.

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