Dingxian pill

To investigate the efficacy and mechanisms of Dingxian pill combined with valproic acid (VPA) on pentylenetetrazol-induced chronical epilepsy in rats.

Methods: A rat model of epilepsy was established by administering pentylenetetrazol (PTZ) water solution (35 mg/kg). Rats were divided into 4 groups, among which three groups were treated with different drugs once a day for 28 d including Dingxian pill (2.4 g/kg), VPA (0.2 g/kg), or a combination of Dingxian pill (2.4 g/kg) and VPA (0.2 g/kg) respectively, and the control group was given the same volume of saline. Rats in different groups were compared based on animal behavior, electroencephalograms, Morris water maze, immunohistochemistry, transcriptomics and real-time polymerase chain reaction.

Rsults: The combination therapy of Dingxian pill and VPA inhibited PTZ-induced seizure-like behavior and reduced seizure grades more significantly than VPA alone. Compared with the control group, the learning and memory ability of chronic PTZ-induced epileptic rats was improved in all the drug treatment groups, especially in the group that received both Dingxian pill and VPA. Similar to the results of MWM tests, expression of the neuroexcitability marker gene c-Fos was reduced after Dingxian pill and/or VPA treatment, and the effect was most pronounced in the combined treatment group. Transcriptomic analysis revealed that gene expression in the rodent hippocampus, which is involved in epilepsy, was upregulated by combined treatment with Dingxian pill and VPA, compared with VPA treatment alone.

Conclusion: Our results not only highlight the anti-epileptic effects of combined Dingxian pill and VPA treatment, but also shed light on the underlying molecular mechanisms and provide a way to apply Traditional Chinese Medicine in the treatment of epilepsy [1)].

1)
Dongxiao QU, Yiqin GE, Limin Z, Liji C, Yonghua X, Jiwei C, Jie T, Guoyi LI, Yudan Z, Qian X. Efficacy and mechanisms of Dingxian pill combined with valproic acid on pentylenetetrazol-induced chronic epilepsy in rats. J Tradit Chin Med. 2023 Apr;43(2):286-294. doi: 10.19852/j.cnki.jtcm.20220928.002. PMID: 36994516.

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