

经颅磁刺激对癫痫病灶脑电相关维数的影响

宋毅军¹、田心*²

1 天津医科大学总医院神经内科

2 天津医科大学生物医学工程系

利用脑功能指标——大鼠病灶区脑电的相关维数,研究低频经颅磁刺激对慢性颞叶癫痫大鼠脑功能改善的作用。对一组颞叶癫痫大鼠施予频率为0.5 Hz、强度为0.4 T、20次/日、连续一周的低频重复性经颅磁刺激(rTMS)。在rTMS前后,分别测取颞叶癫痫大鼠责任病灶区皮层和海马区的脑电,重构时间延迟吸引子,用G-P算法估算反映对应脑区功能状态的相关维数。研究结果显示:施予适量的rTMS(0.4 T、20次/日、连续一周),使颞叶癫痫大鼠海马和相应皮层脑电的相关维数比刺激前明显升高。研究表明适量的rTMS有抑制癫痫的作用。

TRANSCRANIAL MAGNETIC STIMULATION AFFECT ON CORRELATION DIMENSION OF ELECTROENCEPHOGRAPHY IN TEMPORAL LOBE EPILEPTIC RAT

To evaluate the effect of low-frequency transcranial magnetic stimulation for treatment of the temporal lobe epilepsy rats induced by lithium-pilocarpine, appropriate intensity of low-frequency repetitive transcranial magnetic stimulation (rTMS) were administrated to the temporal lobe of epileptic rats on the focus of lesion. Correlation dimension of EEG from frontal lobes, temporal lobes and hippocampus were calculated and compared during the whole course of low-frequency transcranial magnetic stimulation administration. Results show that appropriate intensity of low-frequency transcranial magnetic stimulation (0.4 T, 20 times per day for a week) can promote the correlation dimension of EEG from cortex and hippocampus and improve brain function. It suggests that appropriate rTMS has antiepileptic effect.

关键词

颞叶癫痫大鼠(Temporal lobe epilepsy); 重复性经颅磁刺激(Repetitive transcranial magnetic stimulation); 脑功能(Brain function); 脑电(EEG); 相关维数(Correlation dimension)