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论著

人脐血干细胞对大鼠外伤性视神经病变闪光视觉诱发电位的影响

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摘要：

目的：观察人脐血干细胞对大鼠外伤性视神经病变闪光视觉诱发电位(flash visual evoked potentials, F-VEP)的影响。方法：将48只SD大鼠左眼制成外伤性视神经病变模型，A组不治疗，B，C和D组分别予以玻璃体腔内注射神经营养因子、人脐血干细胞、人脐血干细胞+神经营养因子混合液。记录多个时间点F-VEP的波幅及峰潜时，并进行统计分析。结果：损伤组与正常对照眼、治疗组之间相同时间点的比较，波幅和峰潜时的差异有统计学意义（除损伤后1 h的峰潜时）；各治疗组相同时间点之间的比较，D组与B组之间的波幅与峰潜时的差异均有统计学意义(P<0.05)，其余各组间的差异无统计学意义(P>0.05)。结论：人脐血干细胞和神经营养因子的混合液对大鼠外伤性视神经病变后F-VEP的恢复有一定的促进作用。

关键词： 脐血干细胞 外伤性视神经病变 闪光视觉诱发电位

Effect of human umbilical cord blood stem cells on flash visual evoked potential in traumatic optic neuropathy in rats

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Abstract:

ObjectiveTo investigate the effect of human umbilical cord blood stem cells on flash visual evoked potentials (F-VEP) of the traumatic optic neuropathy rats. MethodsForty-eight Sprague-Dawley rats were randomly divided into an injury group (Group A) and 3 treatment groups (Groups B, C, and D). A traumatic optic neuropathy model was built in Group A, and the rats in Groups B, C, and D were injected with the neurotrophic factor, human umbilical cord blood stem cells, and the mixture of the neurotrophic factor and human umbilical cord blood stem cells, respectively. F-VEP was recorded in both eyes of rats at the 1st h, 1st week, 2nd week, 3rd week, and 4th week after the optic nerve injury. ResultsAt all time points, there were significant difference in the wave latency and amplitude between Group A and normal control eyes (P<0.01). The differences of the wave latency and amplitude between Group A and Groups B, C, and D were statistically significant at various time points after the injury except for the wave latency at the 1st h post-operation (P>0.05). The amplitude in Group D was higher while the latency was shorter than those of Group B at all time points since the 1st week (P<0.05). The comparisons at the same point in the remaining treatment groups were not significantly different (P>0.05). ConclusionThe mixture of human umbilical cord blood stem cells and neurotrophic factor has a promotion effect for the recovery of F-VEP of optic nerve in traumatic optic neuropathy in rats to some degrees.

Keywords: human umbilical cord blood stem cell optic neuropathy flash visual evoked potentials

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