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论文

G-CSF联合VEGF增加APP转基因小鼠AD模型海马CD133及SYN的表达

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摘要：

目的 观察粒细胞集落刺激因子(G-CSF)联合血管内皮生长因子(VEGF)对APP转基因AD小鼠模型突触可塑性的影响。方法 54只10月龄APP转基因小鼠随机分为G-CSF联合VEGF干预组（联合组）、G-CSF干预组及对照组3组。联合组：腹腔注射VEGF（8μg/kg·d）连续3d，之后皮下注射G-CSF（50μg/kg·d），连续7d。G-CSF干预组：腹腔注射PBS连续3d，之后皮下注射G-CSF（50μg/kg·d），连续7d。对照组：腹腔注射PBS，连续3d，之后皮下注射生理盐水，连续7d。各组分别于给药后7、14、28d利用免疫组织化学检测海马区CD133，免疫荧光双标记技术检测5溴-2脱氧尿核苷(BrdU)和突触素(SYN)的双表达。结果 联合组较G-CSF干预组及对照组CD133和SYN表达明显增加。结论 G-CSF联合VEGF能促进神经再生，增强突触功能，改善突触可塑性。

关键词： 粒细胞集落刺激因子；血管内皮生长因子；APP转基因小鼠模型；突触素

G-CSF and VEGF increase expressions of CD133 and synaptophysin in the APP transgenic mouse model

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Abstract:

Objective To observe effects of G-CSF and VEGF on synaptic plasticity in the APP transgenic mouse model. Methods 54 10-month-old APP transgenic mice were randomly divided into 3 groups：the G-CSF combined with VEGF group, the G-CSF group and the control group. Injections of VEGF(8μg/kg·d) for 3d were peritoneally given to mice in the G-CSF combined with VEGF group, then injections of G-CSF (50μg/kg·d) for 7d were subcutaneously given; injections of PBS for 3d were peritoneally given to mice in the G-CSF group, then injections of G-CSF(50μg/kg·d) for 7d were subcutaneously given; injections of PBS for 3d were peritoneally given to mice in the control group, then injections of normal saline for 7d were subcutaneously given. Expression of CD133 was observed 7, 14 and 28 days after administration by immunohistochemistry. BrdU and synaptophysin (SYN) double expressions were detected by fluorescent staining, and influences of G-CSF combined with VEGF on proliferation of mouse stem cells and synaptic plasticity were observed. Results Expressions of CD133 and SYN increased in the G-CSF combined with VEGF group($P<0.05$). Conclusion G-CSF combined with VEGF may increase synaptic function and improve synaptic plasticity by promoting neurogenesis.

Keywords: Granulocyte colony-stimulating factor; Vascular endothelial growth factor; APP transgenic mouse model; Synaptophysin

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