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替莫唑胺缓释微球局部植入治疗大鼠脑胶质瘤的疗效 点此下载全文

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摘要：

目的：研究替莫唑胺缓释微球（temozolomide/PLGA microsphere, TM MS）局部植入对大鼠C6胶质瘤的治疗效果。方法：将C6大鼠胶质瘤细胞接种于鼠脑左侧尾状核，制备大鼠脑胶质瘤模型。分别用替莫唑胺（temozolomide, TM）口服及TM MS肿瘤局部植入治疗，观察大鼠的一般情况、生存期、肿瘤体积大小、病理学变化；免疫组织化学染色检测胶质瘤组织中增殖细胞核抗原（proliferadion cell nuclear antigen, PCNA）蛋白的表达；TUNEL法检测胶质瘤组织细胞的凋亡。结果：TM MS治疗大鼠的生存期较假手术组、空载体组、替莫唑胺口服组明显延长\[（31.2±6.21）d vs （20.7±4.83）、（19.2±6.23）、（24.7±6.31）d; P <0.05或 P <0.01\]。MRI检查显示经TM MS治疗后脑内瘤灶体积较假手术组、空载体组、替莫唑胺口服组明显缩小\[（28.8±6.41）mm 3 vs （56.4±6.92）、（58.2±5.36）、（46.7±7.28）mm 3; P <0.05或 P <0.01\]；TM MS治疗后肿瘤细胞PCNA表达率较假手术组、空载体组、替莫唑胺口服组显著降低\[（20.2±4.33）% vs （63.2±5.91）%、（62.1±7.88）%、（41.7±6.71）%; P <0 01\]，细胞凋亡率也明显增高\[（32.31±3 17）% vs （8.63±1.52）%、（9.25±2.31）%、（16.14±3.42）%; P <0.01\]。结论：TM MS局部植入治疗大鼠脑胶质瘤能显著抑制脑胶质瘤细胞增殖、诱导肿瘤细胞凋亡、延长大鼠生存期，具有潜在的临床应用价值。

关键词：替莫唑胺缓释微球 神经胶质瘤 增殖抑制 细胞凋亡

Therapeutic effect of local implantation with temozolomide/PLGA microsphere in treatment of rat C6 glioma in vivo Download Fulltext

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Abstract:

Objective:To study the therapeutic effect of local implantation with temozolomide/PLGA microsphere (TM MS) on rat C6 glioma in vivo .Methods: C6 glioma cells were implanted stereotaxically to rat caudate nucleus of left cerebrum to establish C6 glioma rat model. C6 glioma rats were treated with oral temozolomide or with TM MS (implanted in cerebral tumor foci). The general manifestation, survival time, tumor size and pathological changes were observed in each group. The expression of proliferation cell nuclear antigen (PCNA) in glioma tissues was examined by immunohistochemistry method. Apoptosis of glioma cells was measured by TUNEL.Results: The survival period of C6 glioma rats in TM MS group was longer than those in the sham group, blank microsphere group and oral Temozolomide group (being \[31.2±6.21\] vs \[20.7±4.83\], \[19.2±6.23\] and \[24.7±6.31\] d, respectively, P <0.05 or P <0.01). MRI results demonstrated that the volume of glioma in interstitial TM MS group was smaller than those in the sham group, blank microsphere group and oral Temozolomide group (being \[28.8±6.41\] vs \[56.4±6.92\], \[58.2±5.36\] and \[46.7±7.28\] mm 3, respectively, P <0.05 or P <0.01). PCNA expression in glioma tissues of TM MS group was significantly lower compared with those in the sham group, blank microshere group and oral Temozolomide group (being \[20 2±4 33\]% vs \[63.2±5.91\]%, \[62.1±7.88\]% and \[41.7±6.71\]%, respectively, P <0.01). Apoptosis rate of glioma cells in TM MS group was markedly higher compared with those in the sham group, blank microshere group and oral Temozolomide group (being \[32.31±3.17\]% vs \[8.63±1.52\]%, \[9.25±2.31\]% and \[16.14±3.42\]%, respectively, P <0 01).Conclusion: Interstitial TM MS therapy effectively inhibits proliferation and induces apoptosis of glioma cells in mice, and it has a potential in clinic tumor therapy.

Keywords:Temozolomide/PLGA microspheres glioma proliferation apoptosis

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