

论文

莪术油明胶微球用于肝动脉栓塞

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摘要:

目的 制备符合肝动脉栓塞要求的莪术油明胶微球(ZT-GMS)。方法 用正交设计优化了微球的制备工艺,对微球的制备工艺、粉体学性质、体外释药、初步稳定性和初步药效进行了研究。结果 球径在40~160 μm的微球占97.16%,平均产率为89.73%,平均含药量为2.13%,平均包封率为19.36%(均以莪术醇计)。体外释药12 h达80%,符合一级动力学模型,释药机理为溶蚀加扩散。稳定性考察实验结果表明其稳定性较好。肝动脉栓塞荷瘤大鼠实验结果表明大鼠平均生存率显著延长(P<0.01),肿瘤体积显著减小(P<0.01)。结论 微球的制备工艺及粒径分布较好,体外释药有明显的缓释作用,有一定疗效。

关键词: 莪术油 明胶微球 肝动脉栓塞 体外释药 药效

ZEDOARY TURMERIC OIL GELATIN MICROSOPHERES FOR HEPATICAL ARTERIAL EMBOLIZATION

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Abstract:

AIM To prepare the zedoary turmeric oil gelatin microspheres (ZT-GMS) for hepatic arterial embolization. METHODS Orthogonal design was used to optimize the technology of preparation with good yield. The appearance, particle size, drug content, drug release *in vitro*, stability, and pharmacodynamics of the obtained microspheres were examined. RESULTS The diameter of 97.16% of the ZT-GMS was in the range of 40~160 μm. The average yield, the average drug content and the average entrapment efficiency were 89.13%, 2.13% and 19.36% respectively (all referred to curcumol). Release of curcumol from the ZT-GMS became much slower and the drug release profiles could be described by first order dynamic model and the release mechanism was erosion and diffusion. Almost no changes were observed in size distribution, drug content, drug release after the ZT-GMS were stored at 40°C (RH 75%), room temperature and refrigeration (0~4°C). The rats treated with ZT-GMS had a significantly slower tumor growth (P<0.01) and longer survival time (P<0.01). CONCLUSION The technology of preparation was successful and drug release from ZT-GMS was slow. It can be used for the embolization for hepatic cancer.

Keywords: gelatin microspheres hepatic arterial embolization drug release pharmacodynamics zedoary turmeric oil

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