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CT perfusion in assessment on radiation effect of rabbit VX2 enterocoelia implanted tumor

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中文摘要:

目的:探讨CT灌注成像在评价兔VX2腹腔移植瘤放疗疗效中的应用价值。方法:建立兔VX2腹腔移植瘤模型,将实验兔随机分为治疗组和对照组,治疗组接受肿瘤放射治疗,对照组单纯饲养1周。对治疗组放疗前和放疗1周后及对照组均行CT灌注扫描。比较治疗组及对照组前后两次CT灌注参数[血流量(BF)、血容量(BV)及血管表面通透性(PS)],对两组肿瘤大小变化、灌注参数与MVD进行相关分析。结果:治疗组和对照组各纳入10只实验兔,放疗1周后治疗组实验兔瘤区BF、BV和PS均较放疗前明显降低(P均<0.01),且均低于对照组(P均<0.01)。对照组瘤区前后两次BF、BV和PS的差异均无统计学意义(P均>0.05)。治疗组与对照组MVD计数的差异有统计学意义(t=12.67,P<0.01)。肿瘤实质区BF、BV与MVD计数呈正相关(r=0.72及0.63,P均<0.05);而PS与MVD计数无明显相关(r=0.40,P>0.05)。结论:CT灌注成像技术能够用于评价兔VX2腹腔移植瘤的放疗疗效。

英文摘要:

Objective: To explore the application value of CT perfusion in assessment on radiotherapy effect of rabbit VX2 enterocoelia implanted tumor. **Methods:** VX2 enterocoelia implanted tumor rabbit models were built, and then were divided into treated group and control group randomly. The rabbits in treated group were treated with radiotherapy, yet rabbits in control group were only fed. Rabbits in two groups underwent CT perfusion (CTP) before and one week after radiotherapy or feeding. The first and the second CTP parameters (blood flow [BF], blood volume [BV] and permeability surface [PS]) were compared between treated group and control group. Then, the correlation of tumor size, CTP parameters and MVD in two groups were analyzed. **Results:** There were 10 experimental rabbits in the treated group and control group, respectively. One week after radiotherapy, BF, BV and PS of the VX2 tumors in treated group noticeably decreased compared to before radiotherapy (all P<0.01), which were obviously lower than those in control group (all P<0.01). There was no statistical different in BF, BV and PS of control group between the two times. MVD in the two groups were statistical different (t=12.67, P<0.01). In solid area of tumor, BF and BV were positively correlated with MVD (r=0.72, 0.63, both P<0.05), but PS was not correlated with MVD (r=0.40, P>0.05). **Conclusion:** CTP can be used to evaluate radiotherapy effect of rabbit VX2 enterocoelia implanted tumor.

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