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扩散加权成像ADC值与直肠癌预后因素的相关性研究

Correlation between value of apparent diffusion coefficient of DWI and prognostic factors of rectal cancer

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中文摘要:

目的 探讨ADC值与直肠癌预后因素的关系.方法 对47例经病理证实的直肠癌患者于手术及辅助治疗前行盆腔常规MRI及DWI,依据直肠癌术前MRI分期、大体分型、组织学因素等进行分组.测量直肠癌ADC值,分析其与术前MRI分期、大体分型、肿瘤分化程度的相关关系.结果 术前MRI分期:T1-2期14例,T3期27例,T4期6例,其中17例无淋巴结转移(N0).肿瘤是否浸润直肠系膜筋膜(MRF)之间ADC值差异有统计学意义($P=0.039$),mrN0与mrN1-2肿瘤ADC值差异亦有统计学意义($P=0.01$).以肿瘤 $ADC \leq 0.924 \times 10^{-3} \text{ mm}^2/\text{s}$ 为阈值,诊断直肠癌MRF浸润的敏感度为80%,特异度为59%;以肿瘤ADC阈值 $\leq 0.925 \times 10^{-3} \text{ mm}^2/\text{s}$ 为阈值,诊断mrN1-2的敏感度为67%,特异度为71%.mrT分期、大体分型、不同分化程度肿瘤的ADC值差异无统计学意义.结论 直肠癌平均ADC值与MRF浸润状态、mrN分期显著相关.ADC值可以作为提示肿瘤侵袭性及预后的影像学生物标志物之一.

英文摘要:

Objective To explore the correlation between the value of ADC and prognostic factors of rectal cancer. **Methods** Forty-seven patients with primary rectal cancer confirmed by pathology underwent pelvic cavity convention MRI and DWI before surgical operation and neo-adjuvant therapy. The mean ADC was measured and compared between groups based on MRI parameters, gross classification and histological parameters. **Results** Among 47 patients, 14 were considered to be T1-2 tumors, 27 were T3 tumors, 6 were T4 tumors. Seventeen patients were staged as N0. The mean ADC was statistically different between MRF free and MRF invaded tumors ($P=0.039$), as well as between mrN0 and mrN1-2 cancers ($P=0.01$). Analysis of ROC curves revealed that when the cut-off value for MRF invaded and mrN1-2 was $ADC \leq 0.924 \times 10^{-3} \text{ mm}^2/\text{s}$ and $\leq 0.925 \times 10^{-3} \text{ mm}^2/\text{s}$, the sensitivity and specificity was 80% and 59%, 67% and 71%, respectively. The mean ADCs were not significantly different between the various groups of T stage, histological differentiation grades nor gross classification. **Conclusion** Significant correlations were found between the values of mean ADC and the status of MRF and N stage of rectal cancer. ADC has the potential to become one of the imaging biomarkers of tumor aggressiveness and prognosis.

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