

论著

多层螺旋CT肺癌灌注成像与VEGF和PCNA表达的关系

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摘要

目的: 探讨血管内皮生长因子(VEGF)、增殖细胞核抗原(PCNA)表达与多层螺旋计算机体层扫描(MSCT)肺灌注成像的关系。方法: 2005年12月至2008年1月在湘雅医院对61例肺内单发结节患者行MSCT肺灌注扫描, 其中22例非小细胞肺癌(NSCLC)患者获得与灌注成像兴趣区相当的病理层面。采用免疫组织化学的方法观察CD34, VEGF和PCNA表达。用Spearman相关分析探讨22例NSCLC患者灌注参数与NSCLC分化程度及CD34-MVD, VEGF, PCNA表达的相互关系。结果: VEGF与PCNA在肿瘤组织中呈异质性表达。分化程度与总CD34-MVD无关, 而与未形成完整管腔的周围区CD34-MVD, PCNA, VEGF的表达强度呈正相关(均 $P < 0.05$)。未形成完整管腔的周围区CD34-MVD与VEGF和PCNA的表达强度呈正相关。分化程度与血流量(BF), 血容量(BV), 最高增强值(PEI)均呈负相关(均 $P < 0.05$)。总CD34-MVD与PEI呈正相关($P < 0.05$)。未形成完整管腔的周围区CD34-MVD与BF, BV, PEI均呈负相关($P < 0.05$)。PCNA与BF, BV, PEI均呈负相关($P < 0.05$)。结论: PCNA与VEGF均参与肿瘤增殖与血管新生的调控, 灌注成像主要通过评价微血管构筑表达水平来判断肿瘤的恶性程度。

关键词 [MSCT肺灌注成像](#) [微血管构筑表型](#) [非小细胞肺癌](#)

分类号

Multi-slice spiral CT pulmonary perfusion imaging and the expression of VEGF/PCNA in non-small cell lung cancer

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Abstract

Objective To investigate the relation between expression of vascular endothelial growth factor (VEGF)/ proliferating cell nuclear antigen (PCNA) and multi-slice spiral computer tomography (MSCT) perfusion imaging. Methods Sixty-one patients who underwent CT perfusion scan by 16-slice spiral CT were examined. Among them, 22 were brought into our research after surgery. The corresponding layers of tumor tissue specimens to the layer of CT perfusion scan were selected to determine the expression of CD34, VEGF, and PCNA. Spearman correlation analysis was used to determine the relation between differentiation of non-small cell lung cancer (NSCLC), the expression of CD34, VEGF/PCNA, and CT perfusion parameters. Results There was a lot of heterogeneity in VEGF and PCNA expression of NSCLC. The degree of differentiation had positive correlation with the uncomplete lumen of the surrounding area CD34-MVD and the expression of PCNA and VEGF ($P < 0.05$). There were positive correlations between the uncomplete lumen of the surrounding area CD34-MVD and expression of VEGF and PCNA, respectively (both $P < 0.05$). Blood flow (BF), blood volume (BV), and peak enhancement image (PEI) decreased with the decreasing differentiation of NSCLC ($P < 0.05$). The total CD34-MVD showed a positive correlation with PEI ($P < 0.05$), and the uncomplete lumen of the surrounding area CD34-MVD showed a negative correlation with BF, BV, and PEI (all $P < 0.05$). The PCNA expression showed a negative correlation with BF, BV, and PEI ($P < 0.05$). Conclusion PCNA and VEGF expression in NSCLC regulates angiogenesis and proliferation at the same time. Perfusion parameters reflect the expression of microvascular architecture phenotype, and exactly evaluate the malignant degree of tumor.

Key words [multi-slice spiral computer tomography pulmonary perfusion imaging](#) [tumor microvascular architecture phenotype](#) [non-small cell lung cancer](#)

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