# 结直肠癌中VEGF-C和MMP-2蛋白表达量与肿瘤侵袭转移关系的研究

《现代肿瘤医学》[ISSN:1672-4992/CN:61-1415/R] 期数: 2019年09期 页码: 1576-1580 栏目: 论著（消化·泌尿系肿瘤） 出版日期: 2019-03-30

**Title:** Relationship between expression of VEGF-C and MMP-2 and the invasion and metastasis of human colorectal cancer

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**关键词:** 结直肠癌; VEGF-C; MMP-2; RT-PCR; 免疫组织化学

**Keywords:** colorectal cancer; VEGF-C; MMP-2; RT-PCR; immunohistochemistry

**分类号:** R735.3

**DOI:** 10.3969/j.issn.1672-4992.2019.09.026

**文献标识码:** A

**摘要:** 目的：研究VEGF-C、MMP-2在结直肠癌中mRNA和蛋白水平的表达，分析其表达与临床病理特征间关系，探讨其在结直肠癌中的表达及其意义。方法：收集46例常熟市第二人民医院病理科2014年至2017年结直肠癌手术切除的新鲜肿瘤组织及20例癌旁正常组织。采用实时荧光定量逆转录聚合酶链反应方法检测46例结直肠癌与癌旁正常组织中VEGF-C mRNA、MMP-2的表达，应用免疫组织化学方法检测结直肠癌与癌旁正常组织VEGF-C、MMP-2蛋白的表达，分析VEGF-C mRNA、MMP-2 mRNA和蛋白表达与临床病理分期特征间关系。结果：46例结直肠癌中VEGF-C mRNA（P<0.05）、MMP-2 mRNA（P<0.05）转录水平显著高于癌旁正常组织。VEGF-C mRNA转录水平与患者年龄、性别和肿瘤直径等无相关性（P>0.05），与组织学分级、TNM分期、淋巴结和远处转移等有相关性（P<0.05）；MMP-2 mRNA转录水平与年龄、性别、肿瘤直径、淋巴结和远处转移等无相关性（P>0.05），而与组织学分级、TNM分期上有统计学差异（P<0.05）。VEGF-C蛋白表达量与性别、肿瘤直径和远处转移无相关性（P>0.05），而与患者年龄、淋巴结转移、组织学分级和TNM分期等相关（P<0.05）；MMP-2蛋白表达量与年龄、性别、肿瘤直径和远处转移无相关性（P>0.05），只与组织学分级和TNM分期等相关（P<0.05）。两基因间mRNA转录水平与蛋白表达水平呈线性相关性（P<0.01）。结论：VEGF-C、MMP-2蛋白的高表达与结直肠癌细胞侵袭及转移过程的发生密切相关，可为作潜在靶向标志物，为临床上进一步诊断治疗及预后提供理论依据。

**Abstract:** Objective：To investigate the relationship between expression of VEGF-C and MMP-2 and the pathogenesis of colorectal cancer.Methods：Fresh tumor tissue of 46 cases of colorectal cancer，and 20 cases of normal tissues near the cancer removed by surgical operation，were collected from the pathology department of the Second People's Hospital of Changshu between 2014 to 2017.Real-time quantitative reverse transcriptase-polymerase chain reaction was applied on 46 cases of colorectal cancer，20 cases of corresponding adjacent noncancerous tissues in order to detect mRNA expression of VEGF-C and MMP-2 gene.Protein expression was detected by immunohistochemistry.Statistical analysis was carried out to analyze the correlation between VEGF-C and MMP-2 in gene expression and various clinical parameters in these colorectal cancer patients.Results：VEGF-C mRNA expression in 46 colorectal cancer cases had increased significantly(P<0.05) and MMP-2 mRNA expression was significantly higher than that of the adjacent normal tissues(P<0.05).There was no correlation between VEGF-C mRNA expression with patient age，gender and tumor diameter(P>0.05)，but there was a correlation with histological grading，TNM staging，lymph node and distant metastasis(P<0.05).There was no correlation between MMP-2 mRNA expression and age，gender，tumor size，lymph node and distant metastasis(P>0.05)，and with histological grading，TNM stage，there was a significant difference(P<0.05).There was no correlation between VEGF-C protein expression with patient gender，tumor diameter and distant metastasis(P>0.05)，but there was a correlation with patient age，lymph node metastasis，histological grading and TNM

staging(P<0.05).There was no correlation between MMP-2 protein expression with patient age，gender，tumor diameter and distant metastasis(P>0.05)，but there was a correlation with histological grading and TNM staging(P<0.05).The transcriptional level of two gene mRNA was positively correlated with protein expression level(P<0.01).Conclusion：Up-regulated expression of VEGF-C and MMP-2 protein are significantly correlated with invasion and metastasis of colorectal cancer，and therefore could be taken as a vital index to judge the feature of colorectal cancer and data reference of further therapy.

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**备注/Memo:** 常熟市卫计委科研计划指导性项目（编号：Gwzx201604）

更新日期/Last Update: 2019-03-30