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临床研究 CLINICAL RESEARCH

结肠腺癌LYVE–1, ICAM–1及LFA–1的表达与淋巴道转移的关系

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■背景资料
肿瘤的发生 发展 侵袭和转移是一个十分复杂的生物学现象, 受到许多复杂因素的影响和制约, 其中也包括黏附分子的表达, 目前较多研究认为, ICAM-1与肿瘤转移有关, 也可能为肿瘤侵袭 转移的促进因素之一, 但其如何促进肿瘤转移的机制尚未阐述清楚.

Correlations of lymphatic vessel endothelial hyaluronan receptor-1, intercellular adhesion molecular-1 and lymphocyte function-associated antigen-1 expression with lymphatic metastasis in colon adencarcinoma

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Abstract

AIM: To explore the mechanism of lymphatic metastasis by observing the expression of lymphatic vessel endothelial hyaluronan receptor-1 (LYVE-1), intercellular adhesion molecular-1 (ICAM-1) and lymphocyte function-associated antigen-1 (LFA-1) in colon adencarcinoma and lymphatic vessels.

METHODS: Immunohistochemistry was used to detect the expression of LYVE-1, ICAM-1 and LFA-1 in 60 patients (30 cases with lymphatic metastasis, 30 cases without lymphatic metastasis) with colon adencarcinoma.

RESULTS: The number density (5.05 ± 1.57 *vs* 3.45 ± 1.84, $P < 0.01$) and absorbency (0.231 ± 0.078 *vs* 0.196 ± 0.089, $P < 0.05$) of lymphatic vessels in patients with lymphatic metastasis were markedly higher than those in ones without lymphatic metastasis, and the average area of single lymphatic vessel was decreased. The expression of ICAM-1 (0.069 ± 0.036 *vs* 0.017 ± 0.012, $P < 0.01$) was increased in the cancer cells from patients with lymphatic metastasis in comparison with that in ones without metastasis, and it was not found in lymphatic vessels. The expression of LFA-1 was detected in the blood vessels and some lymphatic endothelia of colon adencarcinoma patients with lymphatic metastasis.

CONCLUSION: The expression of LYVE-1, ICAM-1 and LFA-1 may lead to hyperplasia and dilation of lymphatic vessels as well as the lymphatic metastasis of colon adencarcinoma.

Key Words: Adencarcinoma; Colon; Adhesion molecule; Lymphatic; Metastasis

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摘要

目的: 探讨癌细胞淋巴管转移机制, 观察细胞黏附分子LYVE-1, ICAM-1及LFA-1在结肠腺癌组织及淋巴管的表达.

方法: 结肠腺癌患者术后组织标本60例, 其中淋巴结转移30例, 无淋巴结转移30例, 运用免疫组织化学的方法检测LYVE-1, ICAM-1及LFA-1在结肠腺癌组织及淋巴管的表达.

结果: 有淋巴结转移组的结肠腺癌淋巴管数密度(5.05 1.57 *vs* 3.45 1.84, $P<0.01$)和吸光度(0.231 0.078 *vs* 0.196 0.089, $P<0.05$)均比无淋巴结转移组增加, 单个淋巴管的平均面积减少; ICAM-1在淋巴结转移组结肠腺癌的

■研发前沿
在过去的10余年中, 人们对肿瘤转移的研究热点主要集中在肿瘤新生血管的研究上, 尤其是对血管内皮细胞生长因子(VEGF)的研究较多, 肿瘤血管形成以及抗血管形成的研究取得了令人瞩目的成就, 直到近几年, 人们开始认识到, 肿瘤淋巴管的形成在肿瘤的转移中同样发挥着重要的作用, 而黏附分子在其中发挥着重要的作用, 对其进行深入的研究, 有望开辟肿瘤治疗的又一重要途径.

癌细胞中表达上调(0.069 0.036 *vs* 0.017 0.012, *P*<0.01), 淋巴管不表达; LFA-1在结肠腺癌的血管及转移组部分淋巴管内皮上有表达.

结论: LYVE-1, ICAM-1及LFA-1在人结肠腺癌中的表达, 可能与淋巴管增生和扩张, 促进癌细胞的淋巴转移有关.

关键词: 腺癌; 结肠; 黏附分子; 淋巴管; 转移

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0 引言

, . , . , . , .

, LYVE-1, ICAM-1 LFA-1 , .

1 材料和方法

1.1 材料 60 , 30 , 36 , 24 , 33-80(55.8 11.2) , HE . LFA-1 ICAM-1 , LYVE-1 Santa Cruz , PV-9000 SP-9002 .

1.2 方法 , 40 g/L , , ; , 30 mL/L H_2O_2 30 min ; 0.01 mol/L (pH 6.0) ; ; (1: 100), 4 ; 37 30 min; 0.01 mol/LPBS 5 min 3; DAB , , , , .

4.0 , (*A*) , , , 0, . 5 , 3 .

统计学处理 SPSS 10.0 , χ^2 , *P*<0.05 .

2 结果

2.1 LYVE-1的表达 LYVE-1 , . , , , , , , (1A). . , . , (*P*<0.05). , . , (*P*>0.05). (*P*>0.05), .

2.2 ICAM-1的表达 60 , ICAM-1 (1B), 0.2, , (*P*>0.05). , , (*P*<0.01). ICAM-1 , 0.1 , , , 0, , (*P*<0.01), , ICAM-1 (1). 60 ICAM-1 .

2.3 LFA-1的表达 LFA-1 (1C), , , (1D), LFA-1

表 1 结肠腺癌转移与淋巴管的密度及ICAM-1的表达 (mean ± SD, n = 30)

观察指标	无转移组	转移组
淋巴管数密度(个/高倍视野)	3.45 ± 1.84	5.05 ± 1.57[b]
淋巴管壁吸光度	0.196 ± 0.089	0.231 ± 0.078[a]
淋巴管面密度	0.014 ± 0.011	0.015 ± 0.0093
单个淋巴管平均面积 (μm^2)	733.1 ± 543.1	689.9 ± 512.3
血管数密度(个/高倍视野)	5.44 ± 2.07	9.45 ± 4.25[b]
血管壁吸光度	0.311 ± 0.064	0.304 ± 0.093
癌细胞吸光度	0.017 ± 0.012	0.069 ± 0.036[b]

[a]P<0.05, [b]P<0.01 *vs* 无转移组.

■创新盘点
以往对肿瘤转移的研究重点主要集中在微血管上, 对微小淋巴管的研究由于缺乏有效的淋巴管标记物, 研究较少. 本文立足于观察肿瘤淋巴转移 黏附分子 淋巴管3者的关系, 研究肿瘤淋巴管转移与黏附分子的关系.

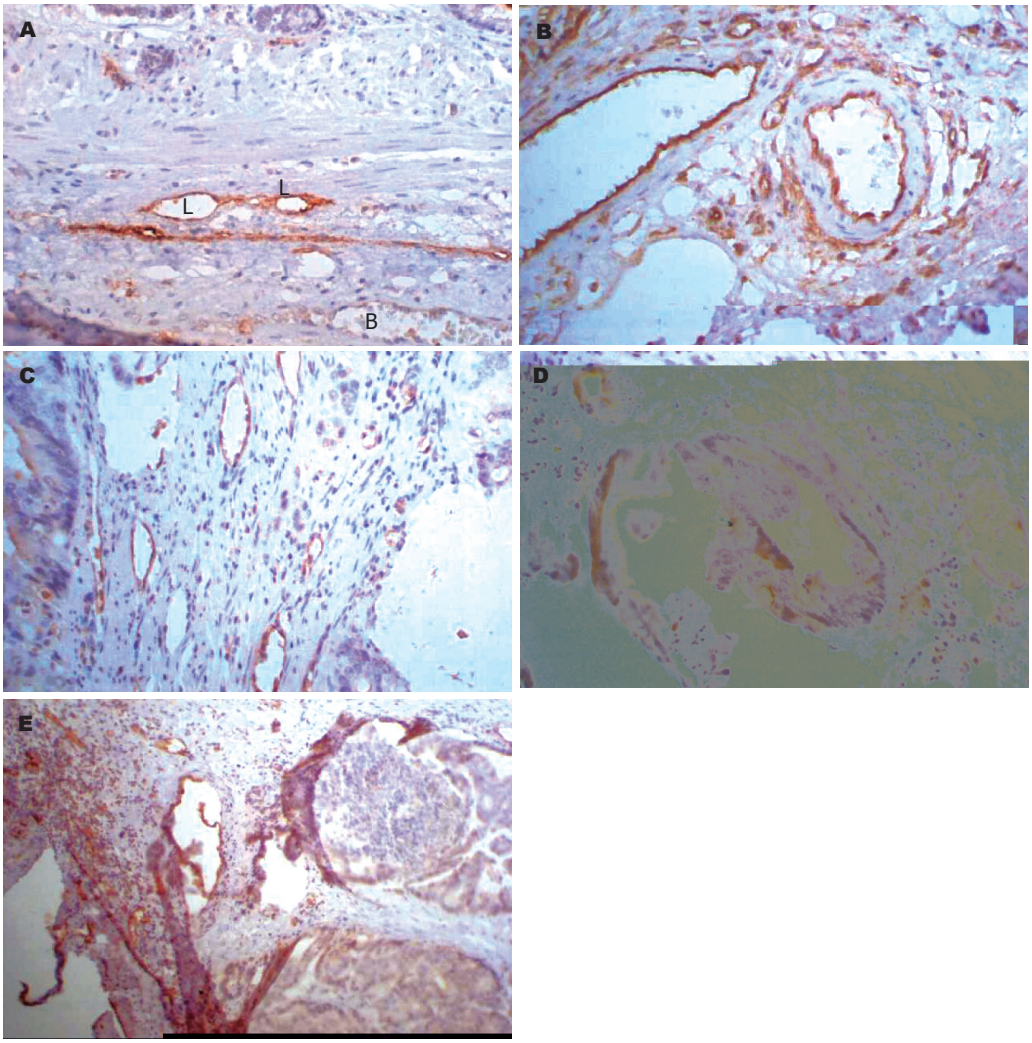

图 1 结肠腺癌LYVE-1, ICAM-1, LFA-1表达(SP × 200). A: LYVE-1淋巴管表达(L为淋巴管, B为血管); B: ICAM-1血管表达; C: LFA-1血管表达; D: LFA-1癌表达; E: LFA-1淋巴管表达.

4 (1E), . LYVE-1
LFA-1 . (HA)[1],

,

3 讨论

. LYVE-1 [2].
, LYVE-1 ,
. , , ,
, ,

■应用要点
目前, 针对抑制肿瘤血管新生的药物有许多优点, 如这类制剂作用广泛 可用于多种肿瘤 不诱导肿瘤细胞的耐药性 可多次重复应用 副作用少等. 因此对抑制淋巴管生成的研究无疑已成为当前抗癌研究的新热点. 可以预见, 随着对肿瘤的抗淋巴转移治疗的进一步深入研究, 有可能开辟肿瘤治疗的一个重要有效的途径.

LYVE-1 .

HA , HA . , [3]. , LYVE-1 [4] [5], , . ICAM-1 , , [6]; , ICAM-1 LFA-1 , T [7]. , ICAM-1 , [8-10]. ICAM-1 . , , , [11-15]. ICAM-1 , ICAM-1 , ICAM-1 LFA-1 , , . . , ICAM-1 , ICAM-1 , ICAM-1 . , ICAM-1 , , , , , , , . ICAM-1 , , , ICAM-1 , , .

. ICAM-1 , 0.1 , , , , (P<0.01), ICAM-1 . , ICAM-1 LFA-1 , . , , ICAM-1 LFA-1 , , . LFA-1 , , ICAM-1 . , LFA-1 , . , LYVE-1 ; ICAM-1 LFA-1 , , .

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■同行评价
本文研究的内容比较新颖, 通过研究得出了一定的数据与结果, 提供了有意义的信息, 具有科学性与创新性.

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• 消息 •

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