胸水中 VEGF、TNF-α 的检测对良恶性胸水的鉴别诊断意义

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摘要 目的:探讨检测胸水中血管内皮生长因子(VEGF)、肿瘤坏死因子(TNF-α)水平对良恶性胸水的鉴别诊断意义。方法:采用酶联免疫检测法(ELISA)测定 34 例良性胸腔积液患者和 44 例恶性胸腔积液患者胸水中 VEGF、TNF-α 水平。结果:良性胸腔积液组患者胸水中 TNF-α 水平显著高于恶性胸腔积液组(P<0.05);良性胸腔积液组患者胸水中 VEGF 水平显著低于恶性胸腔积液组(P<0.05)。结论:胸水中 VEGF、TNF-α 水平的检测对良、恶性胸水患者具有鉴别诊断意义。

关键词:血管内皮生长因子;肿瘤坏死因子;胸水;诊断意义

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Differential Diagnostic Significance of Determination of VEGF, TNF-α in Pleural Effusion between Benign and Malignant Hydrothora

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ABSTRACT Objective: To explore the differential diagnostic significance of determination of VEGF, TNF-α in pleural effusion between benign and malignant hydrothora. Methods: The levels of VEGF, TNF-α in pleural effusion of 34 patients with benign hydrothora, 44 patients with malignant hydrothora were detected by ELISA. Results: The levels of TNF-α in pleural effusion were significantly increased in patients with benign hydrothora in comparison with those of patients with malignant hydrothora, and the levels of VEGF were significantly decreased in patients with benign hydrothora in comparison with those of patients with malignant hydrothora, the difference was statistically significant (P<0.05). Conclusion: The levels of VEGF, TNF-α in pleural effusion may be used as an marker in the differential diagnostic significance of benign and malignant hydrothora.

Key words: VEGF; TNF-α; Hydrothora; Diagnostic significance

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前言

胸水即胸腔积液,是呼吸系统的常见的临床表现,可由结核性、肿瘤等多种疾病产生病理性渗出液贮留于胸膜腔而形成[1,2]。因造成胸水的病因较多,有关胸水病因的诊断对疾病的治疗和预后便显得尤为重要[3],而目前临床常规诊断方法很难确诊胸腔积液的性质[4]。随着医学检测技术水平的提高,已有多种细胞因子应用于良恶性胸水的鉴别诊断[5],但寻找胸腔积液中高敏感性、高准确性的标志物质来早期诊断良恶胸水仍然是临床研究的热点。本研究小组通过测定良性与恶性胸腔积液患者胸水中肿瘤坏死因子(tumor necrosis factor-alpha,TNF-α)与血管内皮生长因子(vascular endothelial growth factor,VEGF)水平,探讨了胸水中 TNF-α 与 VEGF 对良恶性胸水疾病的鉴别诊断价值,现报道如下。

1 资料与方法

1.1 一般资料

选择 2009 年 4 月 ~2011 年 4 月在我院住院的胸腔积液患者 78 例,经临床确诊后分为良性胸腔积液组和恶性胸腔积液组。其中,良性胸腔积液组 34 例,男 18 例,女 16 例,年龄 20~64 岁,平均年龄 47.6 岁,结核性胸膜炎 27 例,肺部感染 3 例,充血性心力衰竭 2 例,胸部外伤 2 例,均依据相关临床资料进行确诊;恶性胸腔积液组 44 例,男 24 例,女 20 例,年龄 51~74 岁,平均年龄 61.4 岁,肺癌 32 例,乳腺癌 5 例,肝癌 4 例,胃癌 2 例,肾癌 1 例,均经病理学或细胞学检查后确诊。

1.2 检测方法[6,7]

常规无菌条件下穿刺抽取两组患者胸水,留取样本 5 ml,3000r/min 离心 10 min,分离上清液,置于 -40℃冰箱保存待测。采用酶联免疫检测法(ELISA)测定胸水中 VEGF 与 TNF-α 水平,试剂盒由上海森雄科技实业有限公司提供,具体操作严格按照试剂盒说明书进行。

1.3 统计学分析

采用 SPSS17.0 统计学软件进行统计分析,计量资料以均值± 标准差($\bar{x}\pm s$)表示,组间比较采用 t 检验,P<0.05 为差异有统计学意义。

2 结果

由表 1 可知,良性胸腔积液组患者胸水中 VEGF 水平显著低于恶性胸腔积液组,差异具有统计学意义(P<0.05);良性胸腔积液组患者胸水中 TNF-α 水平显著高于恶性胸腔积液组,

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差异亦具有统计学意义（P<0.05）。

表 1 两组患者胸水中 VEGF、TNF-α 水平比较（$\bar{x}\pm s$）

Table 1 Comparison of VEGF and TNF-α levels in pleural fluid of two groups ($\bar{x}\pm s$)

Groups	Cases	VEGF(pg/l)	TNF-α(pg/l)
Benign pleural effusion group	34	1743.75± 169.23*	42.31± 5.01*
Malignant pleural effusion group	44	3219.54± 331.24	9.34± 1.07*

Note: *means the difference is significance comparing with the malignant pleural effusion group.

3 讨论

TNF-α 是一种由细菌或肿瘤细胞刺激而激活的单核 - 巨噬细胞分泌的细胞因子，具有广泛的生物活性[8]。TNF-α 对肿瘤细胞有细胞毒和细胞静止作用，并可与其他细胞因子协同作用，增强其抗肿瘤的作用。此外，因 TNF-α 属于前炎症因子，尚可介导炎症反应与免疫反应[9,10]。有报道称[11]，当胸膜间皮细胞和巨噬细胞受到细菌及其他炎性刺激时，会分泌大量 TNF-α，致使胸液中 TNF-α 水平升高。本研究结果显示，良性胸腔积液组患者胸水中 TNF-α 水平显著高于恶性胸腔积液组，与文献报道相似[12]。其原因可能在于，恶性胸腔积液患者胸水中存在一种 TNF-α 抑制物，该物质可通过抑制胸膜间皮细胞和巨噬细胞分泌和释放 TNF-α，或加速 TNF-α 的代谢，致使患者胸水中 TNF-α 活性与水平降低，降低了 TNF-α 对恶性肿瘤细胞的细胞毒性作用[13,14]。

VEGF 是一种对血管生长有强效诱导作用的有丝分裂原，对血管内皮细胞具有特异性[15,16]。该物质广泛分布于人体内各重要器官和组织中，能够与血管内皮细胞上特异的酪氨酸激酶受体结合，发挥其促进血管生长、增加血管通透性、促进肿瘤转移等生物活性[17,18]。有报道称[19,20]，新生血管的形成是肿瘤细胞生长、浸润和转移的必要条件，而 VEGF 是肿瘤组织中促进血管病理性形成的介导物，具有强大的促进血管内皮细胞分化、增殖，诱导新生血管形成的作用，并可促进微血管通透性增强的作用，与肿瘤细胞的分化、生长及浸润密切相关，其水平越高，提示肿瘤越趋于恶性。本研究结果显示，恶性胸腔积液组患者胸水中 VEGF 水平显著高于良性胸腔积液组，说明恶性胸水的形成与 VEGF 密切相关，胸水中 VEGF 高表达有助于对良恶性胸水的鉴别诊断。

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