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Expression of TNF-α and its role in insulin resistance after severe scalding in mice

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Abstract Objective: To clarify the mechanism of the role of overexpression of TNF-α mRNA in insulin resistance after severe scalding. Methods: In the mice inflicted with 30% TBSA full-thickness skin scalding, the dynamic changes of TNF-α mRNA expression in the liver and the activity of insulin receptor tyrosine protein kinase (InsR-TPK) were determined. Then the reinstatement of InsR-TPK activity by injecting TNF-McAb for 3 days was also observed. Results: The expression of TNF-α mRNA in the liver was markedly increased in the first 3h post-scalding and remained high for 5 days. The activity of InsR-TPK in both the liver and skeletal muscle with or without insulin stimulation was greatly reduced as compared with the control. In addition, these disorders of InsR-TPK activity of muscle can be ameliorated through neutralization of the circulatory TNF-α by administration of TNF-McAb. Conclusion: The suppression of insulin receptor signal transmission due to the overecpression of TNF-α mRNA and elevated circulatory TNF-α level may be the molecular mechanism and central stage of insulin resistance after thermal injury.

Key words scalding; TNF-α mRNA; tyrosine protein kinase; mouse

头颈部肿瘤患者血清 sIL-2R及 TNF含量的观察

Observation on serum levels of sIL-2R and TNF in patients with head-neck malignant tumors

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近年来发现,头颈部肿瘤患者血清中可溶性白细胞介素-2受体(Soluble interleukin 2 receptor, sIL-2R)、肿瘤坏死因子(Tumor necrosis fector, TNF)可升高,血清 sIL-2R和 TNF含量在一定程度上反应体内 T细胞的活化及肿瘤活动情况[1]。但国内关于正常人及头颈部肿瘤患者血清中 sIL-2R TNF含量的报道较少。我们用酶联免疫吸附法检测了头颈部肿瘤患者及健康献血员 sIL-2R和 TNF含量,现将结果报道如下。

1 材料与方法

研究对象:健康献血员 20例,男女各 10例,为我院输血科提供。喉癌 10例,鼻咽癌 5例,均为我院住院病人,经手术、病理证实。

sIL-2R酶联检测试剂盒:德国 Bochringer Mannbeim Biochemica公司产品,按试剂盒说明书操作,Beckman 700型生化

(下转 254页)

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Prognostic significance of monitoring of urinary IL-2 and TNF levels after intravesical BCG instillation in patients with superficial bladder carcinoma

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Abstract Objective: To explore the relationship between the levels of urinary IL-2 and TNF and prognosis after intravesical BCG instillation in patients with superficial bladder carcinoma. Methods: The level of urinary IL-2 and that of urinary TNF were respectively determined with CTLL-3H-TdR endosmosis and enzyme-linked immunosorbent assay (ELISA) in 32 patients with superficial bladder carcinoma. The patients were then followed up for 43.5 months. Results: Six out of the 32 (18.7%) patients had recurrence. The levels of urinary IL-2 and TNF were significantly lower in patients with recurrence than in those without. Conclusion: The monitoring of levels of urinary IL-2 and TNF after intravesical BCG instillation in patients with superficial bladder carcinoma is of great prognostic value.

Key words bladder neoplasm; immunity; prognosis

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分析仪 405 nm检测 A值。标准品直线回归相关系数 V=0.996,用直线回归方程将所测样品 A值代入计算得样品 sIL-2R含量。

TNF酶联检测试剂盒:军事医学科学院基础医学研究所生产。按试剂盒说明书操作。标准品指数回归相关系数 V=0.92~0.96,用指数回归方程将所测样品 A值代入计算得样品 TNF含量。

2 结果

健康献血员血清 sIL-2R含量:10例男性献血员血清 sIL-2R含量为(126.2±76.4) pmol/L;10例女性献血员为(142.3±73.7) pmol/L,两者相差不显著($P>0.05$)。全部20例健康献血员血清 sIL-2R含量为(134.2±76.5) pmol/L。

健康献血员血清 TNF含量:10例男性献血员血清 TNF含量为(0.62±0.21) ng/ml;10例女性献血员为(0.62±0.23) ng/ml,两者相差不显著($P>0.05$)。全部20例健康献血员血清 TNF含量为(0.63±0.20) ng/ml。

头颈部肿瘤患者血清 sIL-2R TNF含量见附表。

附表 头颈部肿瘤患者血清 sIL-2R TNF含量($\bar{x}\pm s$)

组别	例数	sIL-2R[C_B/(pmol·L^{-1})]	TNF[ρ_B/(ng·ml^{-1})]
健康献血员	20	134.2±76.5	0.63±0.20
头颈部肿瘤患者	15	253.7±163.4**	2.03±0.75*

*:$P<0.05$,**:$P<0.001$与健康献血员比较

3 讨论

有人报道,肺、胃、宫颈,乳腺等实体肿瘤患者血清 sIL-2R水平显著高于正常上,在发生转移的患者增高更为明显[2]。我们的实验结表明:头颈肿瘤患者血清中 sIL-2R明显高于正常人。其升高的机制大多数学者认为可能与活化 mIL-2R p55蛋白阳性细胞数目增加引起 sIL-2R释放增多有关[3]。Lai等[1]认为鼻咽癌患者的血清 sIL-2R水平升高可能局限于鼻咽部的淋巴组织增殖紊乱所致。也有研究表明,头颈部肿瘤患者细胞免疫功能低下,而其 sIL-2R水平却显著增高,这很可能是因为 sIL-2R与 IL-2结合使 IL-2廓清加速,活化的 T淋巴细胞静息下来,其次大量的 sIL-2R从细胞膜上脱落,使活化的淋巴细胞功能处于衰竭状态所致[3]。

有关正常人血清 TNF含量国内少见报道,我们检测20例健康献血员血清 TNF含量为(0.63±0.20) ng/ml,显著低于头颈部肿瘤患者,Vonbiber等[4]对头颈部鳞状细胞癌的癌组织标本测定,发现 TNF的两种受体 RⅠ和 RⅡ在肿瘤组织中均明显增多,认为 TNF受体在肿瘤细胞的表达增多,可能是为了在肿瘤微环境中,调控肿瘤细胞中的 TNF及其活性。

关键词 头颈部肿瘤;受体;白细胞介素-2;肿瘤坏死因子
中图法分类号 R739.91

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