

论文

血清蛋白质指纹图谱与非小细胞肺癌临床分期关系的研究

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摘要:

目的 检测非小细胞肺癌患者的血清蛋白质谱, 探讨非小细胞肺癌血清蛋白质指纹图与临床分期的关系, 为非小细胞肺癌预后判断、临床治疗决策选择提供依据。方法 共收集69例非小细胞肺癌患者血清, 应用阳离子交换蛋白(CM10)芯片, 通过表面增强激光解吸电离-飞行时间-质谱(SELDI-TOF-MS)技术检测非小细胞肺癌患者血清蛋白质谱, 应用生物信息学方法分析血清蛋白质指纹图与非小细胞肺癌临床分期的关系。结果 比较28例I~II期与41例III~IV期非小细胞肺癌蛋白指纹图, 共筛选出68个有显著性差异的质荷比峰(m/z), 最终筛选出2个潜在标志物5632m/z、13779m/z。5632m/z、13779m/z均在III~IV期非小细胞肺癌中高表达, 在I~II期非小细胞肺癌中低表达。将此标记物作为非小细胞肺癌分期模型, 其正确指数为0.587, 一致率为79.5%, Kappa=0.32。结论 SELDI-TOF-MS技术检测非小细胞肺癌患者血清蛋白质谱, 筛选出m/z位于5632、13779的蛋白质峰可能是非小细胞肺癌术前临床分期的标记物。

关键词: 肺肿瘤; 生物信息学; 临床诊断; 蛋白质质谱

Clinical staging in non-small cell lung cancer by surface-enhanced laser desorption/ionization-time of flight-mass spectrometry

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Abstract:

Objective To detect proteomic changes in non-small cell lung cancer and find the association of serum protein profiles with the clinical stage. Methods Twenty-eight cases of stage I - II non-small cell lung cancer and 41 cases of stage III-IV were detected. Protein fingerprints were detected by surface-enhanced laser desorption/ionizationtime of flight-mass spectrometry(SELDI-TOF-MS) and a CM10 chip. Bioinformatics was used to analyze the relationship between the serum proteomic fingerprint and clinical staging in non-small cell lung cancer. Results Comparing proteomic changes between stage I - II and stage III-IV groups, 68 discrepant proteins were selected. The best combination consisted of 5632m/z and 13779m/z, which were highly expressed in stage III-IV non-small cell lung cancer and lowly expressed in stage I - II, with an accuracy of 0.587 and a compatibility of 79.5%, Kappa=0.32. Conclusions SELDI-TOF-MS can be used to detect serum protein profiles in non-small cell lung cancer, and selected 5632m/z and 13779m/z might be markers for clinical staging before operation.

Keywords: Lung carcinoma; Medical informatics; Clinical diagnosis; Proteomic profile

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