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食管癌中氟代脱氧葡萄糖摄取水平与葡萄糖转运蛋白1表达的关系及其临床意义

Correlation between FDG uptake and the expression of GLUT1 in esophageal cancer and clinical significance

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中文关键词: [食管肿瘤](#) [葡萄糖转运蛋白1](#) [18F 氟脱氧葡萄糖](#) [体层摄影术, 发射型计算机, 单光子](#)

英文关键词: [Esophageal neoplasms](#) [Glucose transporter-1](#) [Fluorodeoxyglucose F18](#) [Tomography, emission-computed, single-photon](#)

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中文摘要:

目的 探讨食管癌组织中氟脱氧葡萄糖F18(¹⁸F-FDG)的摄取靶本比(T/N)和葡萄糖转运蛋白1(GLUT1)表达的关系,分析T/N与食管癌分期、病灶浸润深度、淋巴结转移和预后的关系。方法 对35例食管癌患者术前¹⁸F-FDG符合线路显像,术后应用SP免疫组织化学方法检测食管癌组织标本,并与10名正常人食管组织活检标本对比观察GLUT1蛋白表达。结果 35例食管癌患者病变部位均见不同程度的异常放射性浓聚灶,经病理证实均为原发性食管鳞癌,其中82.86%(29/35)T/N \geq 2.0(4.86 \pm 2.08),其余17.14%(6/35)T/N $<$ 2.0(1.65 \pm 0.18)。35例食管癌组织均有GLUT1蛋白表达,阳性细胞率为(80.00 \pm 19.10)%,10名正常人食管组织中均无GLUT1表达。FDG摄取值(T/N)与GLUT1蛋白表达呈显著正相关($r=0.786, P<0.001$)。T/N与患者的临床分期、肿瘤浸润深度、患者生存期有关($P<0.05$),但T/N与淋巴结转移无明显关系。结论 食管癌中FDG摄取水平(T/N)与GLUT1表达有直接的关系,T/N对确定食管癌患者的临床分期及预后判断有较大的帮助,对原发肿瘤和淋巴结转移的定性诊断价值有限。

英文摘要:

Objective To analyze the correlation of ¹⁸F-fluorodeoxyglucose (¹⁸F-FDG) uptake (T/N) and expression of glucose transporter-1 (GLUT1) in patients with esophageal cancer, and the relationship between T/N and tumor staging, infiltration depth, lymph node metastasis and prognosis. Methods A total of 35 patients with esophageal cancer underwent ¹⁸F-FDG SPECT examinations before surgery. The expressions of GLUT1 in 35 patients and 10 normal esophageal tissues were evaluated with streptavidin peroxidase (SP) immunohistochemistry. Results There were abnormal radioactive high uptake regions on SPECT imaging of esophagus in the 35 patients, which were confirmed by pathology as the primary esophageal squamous cell carcinoma. T/N was found higher than or equal to 2.0 (4.86 \pm 2.08) in 29 (29/35, 82.86%), while lower than 2.0 (1.65 \pm 0.18) in 6 patients (6/35, 17.14%). All the 35 tumors tested were GLUT1 positive, and the positive tumor cell area was (80.00 \pm 19.10)%, whereas 10 normal esophageal tissues tested were GLUT1 negative. Correlation was found among FDG uptake (T/N) and GLUT1 expression ($r=0.786, P<0.001$), as well as T/N and staging, infiltration depth, survival time ($P<0.05$), but not with lymph node metastasis. Conclusion FDG uptake (T/N) appears to be correlated with GLUT1 expression in patients with esophageal cancer. T/N shows great value in staging and prognosis judgement, but has limited value in qualitative diagnosis.

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