Expression of RUNX3 gene in pancreatic adenocarcinoma and its clinical significance

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ABSTRACT. We investigated the clinical significance of RUNX3 gene expression in human pancreatic carcinoma. Five samples of pancreatic tissues and 30 samples of pancreatic cancer tissues and paracancerous tissues were collected. RUNX3 expression was detected by real-time PCR and immunohistochemistry. The relationships between clinicopathological findings and the expression of RUNX3 were analyzed. The relative quantification level of RUNX3 mRNA expression in human pancreatic carcinoma tissues and paracancerous tissues was 2.60 (0.42-12.82) and 1.02 (0.19-3.58), respectively (P < 0.05). The percentage of positive cells expressing RUNX3 protein in human pancreatic tissues and paracancerous tissues was 45.5 ± 26.2 and 6.9 ± 6.0%, respectively (P < 0.01). The high RUNX3 group (N = 9) with 45.5% or more of the cancer cells staining for RUNX3 and the low RUNX3 group (N = 21) with less than 45.5% cancer cells staining for RUNX3. Low expression of RUNX3 correlated significantly with an advanced TNM stage (χ² =
6.897, \( P = 0.045 \), lymph node metastasis \( (\chi^2 = 4.739, \ P = 0.029) \) and neural invasion \( (\chi^2 = 5.44, \ P = 0.020) \). On the other hand, no association could be found between RUNX3 expression and clinicopathological variables including age, gender, tumor location, tumor size, tumor differentiation or the serum concentration of CEA and CA199. The expression of RUNX3 in pancreatic cancer tissues was obviously higher than that in the paracancerous tissues. Low expression of RUNX3 may have an important role in aggressiveness, lymph node metastasis and neural invasion in pancreatic cancer. In pancreatic carcinoma tissues, low expression of RUNX3 may indicate a poor prognosis.

**Key words:** RUNX3; Pancreatic cancer; Prognosis