AB044. P015. Clinicopathological relevance of SMAD4 and RUNX3 in pancreatic cancer

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Abstract: *SMAD4/DPC4* is one of the "big four" genes, namely, *KRAS*, *SMAD4*, *CDKN2A*, and *TP53*, that are considered to play primary roles in tumorigenesis and progression of pancreatic cancer. Runt-related transcription factors (RUNX) are important regulators of lineage-specific gene expression in developmental pathways. RUNX3 was initially found to be a neurogenic TrkC neuron-specific transcription factor and also has critical functions in lineage specification and homeostasis of CD8-lineage T lymphocytes. Besides, *RUNX3* functions as a tumor suppressor in some kinds of cancers through TGF-beta, Wnt, and other signaling pathways. A published report has indicated that *RUNX3* and *SMAD4* coordinately regulate the balance between cancer cell proliferation and dissemination in genetically engineered mouse models. We examined the relevance of genetic and expression state of *SMAD4* and *RUNX3* as well as *KRAS* in clinicopathological features of 104 patients who received surgery for pancreatic cancer. We found that retain of the expression of SMAD4 in primary pancreatic cancer tissues was significantly associated with their metastatic recurrences. Moreover, the diffuse expression of RUNX3 and loss of SMAD4 was significantly associated although the association between RUNX3 and SMAD4 did not show any specific association with clinicopathological features. These results suggest that retain of SMAD4 may promote the metastatic recurrence in pancreatic cancer. Although there may be some specific associations between RUNX3 and SMAD4, we could not find any relevant association of them with clinicopathological features of pancreatic cancer.

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