

ASSOCIATION OF INTRATUMORAL MICROBIOME WITH TUMOR IMMUNITY AND PROGNOSIS IN HUMAN PANCREATIC CANCER

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Presentation

Digestive Oncology

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Pancreas

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Presence of intratumoral anaerobic bacteria *Bacteroides*, *Lactobacillus*, and *Peptoniphilus* in pancreatic ductal adenocarcinoma is associated with reduced tumor-infiltrating T cells and shorter survival.

KEY POINTS

- Analysis of 162 surgically resected PDAC cases identified a unique tumor microbiota in 52 cases, with significant differences in alpha diversity ($P<0.01$) and beta diversity ($P<0.01$) compared to paired normal tissues ($N=26$).
- Presence of at least one of three anaerobic bacteria (*Bacteroides*, *Lactobacillus*, *Peptoniphilus*) correlated with significantly lower tumor-infiltrating CD4-positive T cells ($P<0.01$), CD8-positive T cells ($P<0.01$), and CD45RO-positive T cells ($P<0.01$).
- The three prognostic bacteria showed no significant correlation with tumor size, pathological stage, fibrosis, or alterations in four main driver genes (KRAS, TP53, CDKN2A/p16, SMAD4).
- Intratumoral microbiota in PDAC comprised predominantly Proteobacteria and Firmicutes, distinct from gut microbiota composition.
- The study used 16S rRNA qPCR, in situ hybridization, and 16S metagenomics on formalin-fixed paraffin-embedded tissue sections to identify and characterize intratumoral bacteria.

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