Immune Microenvironment Signatures as Prognostic Biomarkers in Gastroenteropancreatic Neuroendocrine Carcinoma (GEP-NEC)

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Abstract #4180

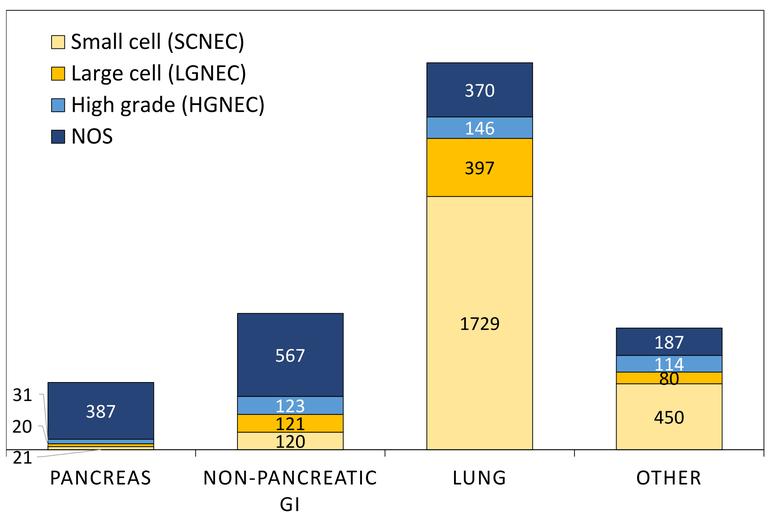
Background

- GEP-NEC is an aggressive malignancy with limited treatment options.
- The role of immune checkpoint inhibitors (ICIs) in GEP-NEC remains unclear.
- This study evaluated immune microenvironment signatures across NEC subtypes to identify prognostic biomarkers.

Methods

- DNA (592-gene panel or whole exome) and RNA sequencing (whole transcriptome) profiling at Caris Life Sciences.
- Tumor microenvironment (TME) composition was estimated using QuanTIseq.
- Overall survival (OS) and immunotherapy-associated OS (IO-OS) were estimated using Kaplan-Meier and Cox models.

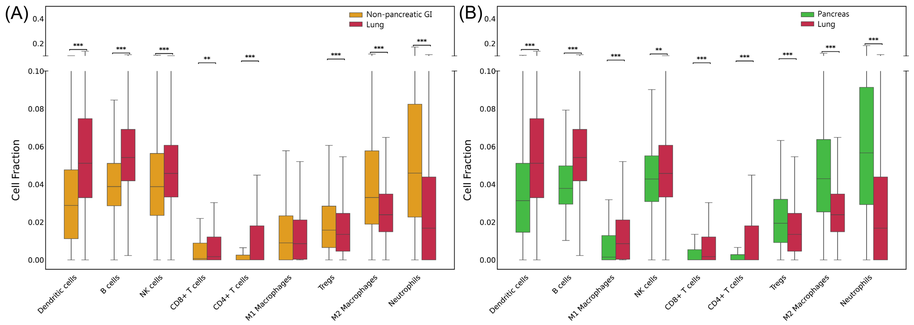
Fig1. Histology distribution across primary tumor sites



- **GEP-NEC exhibits a distinct and relatively immunosuppressive TME compared with lung NEC.**
- **B-cell, NK-cell, and macrophage signatures are prognostic across GEP-NEC subtypes.**

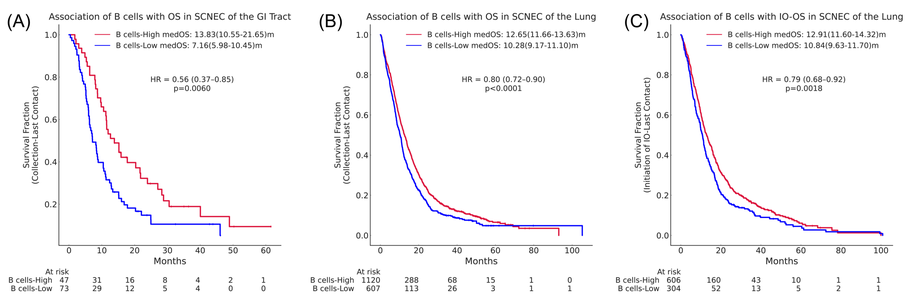
Results

Fig2. TME distribution across non-pancreatic GI and pancreatic NECs



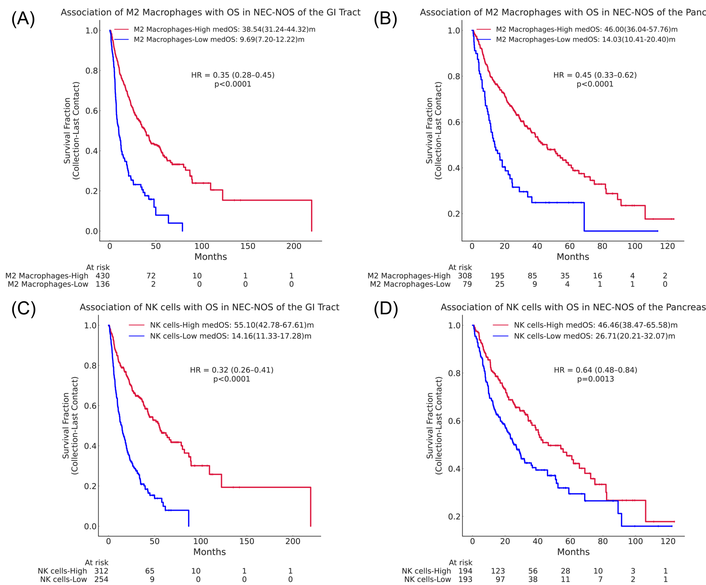
Non-pancreatic GI (A) and Pancreatic NECs (B) exhibited a more immunosuppressive TME compared to Lung-NENs

Fig 3. Association of B cell infiltration with survival in SCNEC of GI tract and lung



Higher B-cell infiltration was associated with improved OS in SCNEC of non-pancreatic GI (A) and Lung (B), and IO-OS in Lung (C)

Fig4. Association of NK cell and M2 Macrophage infiltration with OS in non-pancreatic GI and pancreatic NEC, NOS



Elevated NK-cell and M2 macrophage infiltration were associated with improved OS in non-Pancreatic GI-NEC, NOS (A,C) & Pancreatic NEC,NOS (B,D)

Future Directions

Further evaluation of immune-based stratification and biomarker-driven therapeutic development in GEP-NEC is needed.