NEUROENDOCRINE NEOPLASMS (NENs)

INCIDENCE of NENs

- LUNGS: 25%
- GASTROINTESTINAL: 61%
- UNKNOWN: 14%
- RECTAL: 18%
- SMALL INTESTINE: 18%
- PANCREATIC: 8%
- GASTRIC: 7%
- APPENDICEAL: 5%
- COLONIC: 3%
- LARGE BOWEL: 2%

MARKERS FOR NENs DIAGNOSE IN TARGETED BIOPSIES

CONFIRMATION OF NEUROENDOCRINE NATURE: CHGA, SYP, CD56, CD57, UCHL1, NSE

CONFIRMATION OF EPITHELIAL ORIGIN: Cytokeratins AE1/AE3, CAM5.2, CK18, CK8

GRADING AND STAGING: MITOTIC INDEX (MI), KI-67 LABELING INDEX (LI)

DIAGNOSTIC & THERAPEUTIC CHALLENGES

- VARIETY IN:
  - CLINICAL PRESENTATIONS
  - TERMINOLOGY AND CLASSIFICATIONS
  - THERAPEUTIC OPTIONS/APPROACHES
- 60% ARE ADVANCED AT THE TIME OF DIAGNOSIS
- LIMITED PHASE III EVIDENCE FOR CHEMOTHERAPY
- 33 MONTHS MEDIAN PATIENT SURVIVAL WITH ADVANCED NET

4 TYPES of LUNG NENs

NET ➞ TYPICAL CARCINOID
ATYPICAL CARCINOID

NEC ➞ LARGE CELL CARCINOMA
SMALL CELL CARCINOMA

NENs: A SPECTRUM OF HETEROGENEOUS TUMORS AFFECTING THE NEUROENDOCRINE CELLS (THE CELLS THAT RELEASE HORMONES INTO THE BLOODSTREAM). NENs ARE CLASSIFIED AS:

- NECs:
  - POORLY DIFFERENTIATED NEUROENDOCRINE CARCINOMA, DISPLAYING HIGH-GRADE MALIGNANCY.
  - E.G. LARGE CELL AND SMALL CELL CARCINOMAS.
- NETs:
  - WELL-DIFFERENTIATED NEUROENDOCRINE TUMOURS SHOWING EITHER BENIGN OR UNCERTAIN BEHAVIOR.
  - E.G. TYPICAL AND ATYPICAL CARCINOID.

IHC MARKERS FOR SITE OF ORIGIN

PITUITARY: PIT-1, T-PIT, SF-1
PARAGANGLIOMA: TH, GATA-3
PARATHYROID: PTH, GATA-3
THYROID: TTF-1, CALCA

THORACIC: INSM1, CD56
PULMONARY: TTF-1, POU2F3, SYP, INSM1, OTP
DUODENAL: ISL-1, PDX-1, CDX-2
PANCREATIC & SMALL INTESTINE: ISL-1, PDX-1, CDX-2
MIDGUT: CDX-2, INA
HINDGUT/RECTAL: SATB2, PEPTIDE YY, CDX-2, ISL-1
RECTAL: PAX6, PAX8, SECGL, INSM1

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