

# CARCINOIDS

- Neuroendocrine Cells derived from multipotent stem cells
- Chromogranin A and synaptophysin useful tumour markers.

- Within GI Tract, small bowel carcinoids accounted for 42%, rectal 27% and stomach 9%

# Diagnosis

- Urinary excretion of 5- HIAA

24Hour study

Minimum of two 24 hour estimation

Normal range 2-8 mg/24 hour

May not be increased in foregut carcinoids

Serotonin rich foods should be avoided

Relates to tumour mass and activity

# Localisation

## CT Scan Abdomen

- primary tumour
- mesenteric stranding due to fibrosis
- mesenteric lymphadenopathy
- hepatic metastases

# Localisation tests

## Indium-111 octreotide scan

- Tumour has somatostatin receptors
- Shows about 80- 85% of tumours
- Not specific for carcinoid tumors

Combination of CT Scan and Octreotide scan  
can pick up about 95% of carcinoid

# Principles of treatment

- Surgery affords the only method of cure.
- Carcinoid tumours should be treated by resection irrespective of the presence of metastases because
  - growth of primary neoplasm is slow
  - local complications like obstruction and intussusception

# Gastric Carcinoids

- Constitute 4% of all GI – NET AND 1% of all gastric neoplasm
- Type 1
- Type 2
- Type 3
- Type 4

# Type 1 Gastric Carcinoids

- Account for 70 – 80% of gastric carcinoids
- Associated with autoimmune chronic atrophic gastritis
- Usually multiple and small
- Usually benign
- Small tumours – Endoscopic excision
- Large tumours – Surgical excision

# Type 2 Gastric Carcinoids

- Gastrin dependent
- Develops due to hypergastrinemia due to Zollinger Ellison syndrome
- Removal of source of gastrin together with resection of carcinoid

# Type 3 Gastric Carcinoids

- Sporadic tumors
- Not associated with elevated gastrin levels
- Many of these tumours are classified as poorly differentiated neuroendocrine carcinomas
- Treatment is enbloc surgical resection

# Type 4 Gastric Carcinoids

- Poorly differentiated endocrine carcinoma
- Usually > 5cm
- Often ulcerating
- Usually Unresectable

# Midgut Carcinoids

- Terminal ileum
- Appendix
- Right Colon

# Terminal ileum

- Metastatic spread is common
- Multiple tumours in one third of patients
- Desmoplastic reaction
- Carcinoid Syndrome
- Resection of primary tumour and mesenteric nodal disease

- Resection of primary in the face of hepatic metastases improves survival and leads to greater median progression – free survival
- Cytoreduction surgery for hepatic metastases has important role
- Hepatic artery embolisation – Debulking tumour

- Iodine 131- MIBG useful in disseminated disease.
- Somatostatin analogues
- Alpha inteferon
- Cytotoxic drugs – Etoposide and Cisplatin

# Appendiceal Carcinoid

- Most common neoplasm of Appendix
- Size of primary is predictive of metastatic potential
- $< 1$  cm – Appendicectomy adequate
- $> 2$  cm – Right Hemicolectomy
- 1cm – 2cm – Depends on prognosticating factors

# Pathologic Criteria

- Invasion into the mesoappendix
- Lymphovascular invasion
- Serosal involvement
- Involved margins
- Positive lymph nodes in appendectomy specimen
- High Ki67 index (>2%)
- Goblet-cell variant

# Hindgut Carcinoids

- Colonic Carcinoids
- Rectal Carcinoids

# Colonic Carcinoids

- Right Colon Carcinoids are usually poorly differentiated neuroendocrine cancer
- Radical resection with lymph nodal clearance should be attempted, although often only debulking is possible

# Rectal Carcinoids

- 60% are small and detected incidentally
- Prognosis for these tumors are size dependent
- < 1 cm – Endoscopic excision
- 1 – 2 cm – Transanal excision if there is absence of muscularis invasion and regional lymphnodal involvement
- > 2cm – Total Mesorectal excision

# Carcinoid Syndrome

- Term used when patients with carcinoid tumours have flushing, abdominal pain, diarrhoea, sweating, wheezing, rt.sided heart lesions and pellagra like lesions of skin and oral mucosa.
- Occurs in less than 10% of patients with carcinoid tumours.

# Carcinoid Syndrome

Secretory substances must escape hepatic degradation.

- Hepatic metastases are present
- Extensive retroperitoneal metastases so that the blood drains via the paravertebral veins into systemic circulation.
- Extra intestinal carcinoids eg., bronchial, ovarian or testicular carcinoid.

THANK YOU