Overview of Gastrointestinal Malignancies: Quick Reference

ESOPHAGEAL CARCINOMA

EPIDEMIOLOGY

Esophageal Adenocarcinoma (EAC) and Squamous Cell Carcinoma (ESCC)
In the 'Western World', prevalence of EAC > ESSC
    The increase in EAC is seen predominantly in white males (usually obese)
There is higher overall incidence amongst African Americans

RF for Esophageal SCC
    EtOH
    Smoking
    Achalasia
    Diet: picked foods, smoked foods, scalding liquids
    Caustic trauma and esophagitis
    Plummer-Vinson Syndrome
    H/N cancer
    Tylosis (palmaris and plantaris)

RF for Esophageal Adenocarcinoma (EAC)
    GERD
    Barrett's Esophagus
    Middle age
    Male gender
    Obesity
    Caucasian ethnicity
    (Tobacco)

PATHOGENESIS

Barrett's Esophagus is the precursor lesion: it is irreversible
Sequential accumulation of mutations
    p53 → p16 → aneuploidy → overexpression of Cyclin D and COX-2

PRESENTATION

    Common: Dysphagia and weight loss over 3 – 6 mos.
    Occasional: Odynophagia (pain on swallowing only) and substernal/epigastric pain.
    Uncommon: Horner Syndrome, hoarseness, supraclavicular lymphadenopathy, TEF

SCREENING

No current screening recommendation for GENERAL POPULATION

In patients with Barrett's Esophagus:

- No dysplasia : endoscopy q. 2 – 3 yrs
- Low-grade dysplasia : endoscopy q. 6 mos x 2 , then yearly if stable
- High-grade dysplasia : endoscopy q. 3 mos. OR surgical resection

Screening can only be done when reflux disease has been adequately controlled

TREATMENT

Local and Resectable: **neoadjuvant chemoradiation** (cisplatinum + XRT), then wide **resection**

Local and Unresectable: **endoscopic** intervention (laser ablation, curettage, photodynamic), XRT, or chemoradiation

Metastatic: endoscopic palliation, stenting, palliative XRT and/or chemotherapy

Chemoradiation in UNRESECTABLE cases is nearly equivalent to surgery in RESECTABLE cases

GASTRIC ADENOCARCINOMA

EPIDEMIOLOGY

GAC represents 95% of all gastric malignancy
- Cardia tumors are increasing in incidence (along with EAC)
- Tumors of the antrum are most common, but declining in incidence

Dietary changes have resulted in reduced mortality

RF for GASTRIC ADENOCARCINOMA

- Chronic *Hp* infection : results in 2-fold increased risk
- Smoking
- Lower SES
- Hereditary: E-cadherin polymorphism
- Prior partial gastrectomy for GU or DU
- Advanced age
- Picked and smoked foods
- Low intake of fruits and vegetables
- Exposure to aflatoxin
- Some chronic conditions: pernicious anemia, achlorhydric atrophic gastritis, GU, adenomatous polyps

PRESENTATION

Anorexia, abdominal discomfort, weight loss, anemia and weakness, NV, melena

SCREENING

No routine screening in U.S

Decreased incidence in Japan, where there is a screening program

TREATMENT

Local and Resectable: gastrectomy (there are three forms) + **adjuvant** chemoradiation
requires lifelong B12 supplementation

HEPATOCELLULAR CARCINOMA

EPIDEMIOLOGY

The fourth leading cancer worldwide
Highest rates in Sub-Saharan Africa and SE Asia
    Highest incidence and mortality in China
M > F
In U.S: chronic HBV and HCV explain 30 – 40% of all HCC

RF for HCC
    Chronic **viral hepatitis** (HCV and HBV): these are major risk factor worldwide
    Cirrhosis: progresses to HCC at 1 – 6% per year
    Chronic **Metabolic Liver Disease**: Hemochromatosis, A1AT Deficiency, Wison's Disease
    Aflatoxin

PRESENTATION

80% asymptomatic at Dx
10% undetected pre-mortem
    In a background of cirrhosis: sudden decline in LFTs or clinical indications (e.g. new onset ascites)
    Classic: RUQ pain, weight loss, anorexia, malaise, occasional obscure fever
    Unusual: rupture through liver capsule → hemoperitoneum → hypotension
    Rare: metastatic disease presentation (decreased pulmonary function, bone pain, GI bleeding)

SCREENING

20 – 50% of HCC is not associated with previous detection of cirrhosis
    Serum AFP: is informative only if serial screens are done (q. 6 mos.) in patients with chronic HBV (greater SENS and SPEC compared to screening in patients with cirrhosis)
    Ultrasound: Increased sensitivity patients with cirrhosis relative to chronic HBV
    CT: considered to be the most sensitive test

DIAGNOSIS

Gold standard: Core Bx or FNA
BUT, definitive **Dx can be achieved *without* tissue sample**, if the following three findings occur together:
    Hx of **Cirrhosis**
    Serum **AFP** > 10^3 ng/mL OR steadily increasing
    Hypervascular **intraheptic mass** on CT

TREATMENT

Localized: segmental resection, trisegmental resection, partial hepatectomy, orthotopic transplant

Unresectable: chemoembolization, cryoablation, Theraspheres (radioactive colloid), radiofrequencyablation, systemic chemotherapy (sorafenib: a tyrosine kinase inhibitor)

CHOLANGIOCARCINOMA

EPIDEMIOLOGY
Definitive (curative) surgical resection is achieved in < 10% of all cases

RF for CHOLANGIOCARCINOMA
- PSC
- Clonorchiosis (liver fluke)
- Choledochal cyst
- Caroli's Syndrome
- Chronic cholelithiasis

PRESENTATION
Jaundice, pain, fever, pruritis, choluria, acholic stool

TREATMENT
Localized: a rare presentation; usually a lesion of the distal common duct
Perihilar (Klatskin): extended excision + lobectomy or dual segment (4,5) resection
Unresectable: palliative resections, brachytherapy, XRT, therapeutic stenting

Mayo Protocol: for perihilar tumors associated with PSC and NO mets
Neoadjuvant chemoradiation → XRT → **liver transplantation**

GALLBLADDER ADENOCARCINOMA

EPIDEMIOLOGY

Gallstones in > 75% of patients with GBAC
GBAC is **rarely** diagnosed preoperatively, despite presence of symptoms
Dx and definitive surgery occurs when the tumor is discovered incidentally (e.g. during cholecystectomy)
    Otherwise, the carcinoma is undetected until it is locally advanced

RF for GALLBLADDER ADENOCARCINOMA

    Cholelithiasis
        2. 0 – 2.9 cm: RR = 2.4
        > 3.0 cm : RR > 10
    Chronic cholecystitis with wall calcification

PATHOGENESIS

Chronic inflammation → epithelial dysplasia → atypical hyperplasia → adenomatous polyps → carcinoma *in situ*

PRESENTATION

RUQ pain: worsened by fatty means
RUQ tenderness, NV, anorexia, clinical jaundice, weight loss

If symptomatic before surgery: poor prognosis and low rate of definitive resection (< 5%)

TREATMENT

RESECTABLE
    Stage I and II: surgical re-exploration of lymphovascular drainage basin and dissection of N1 and N2 nodes → results in delayed recurrence
        Laproscopic: all port sites must be excised due to high propensity for seeding
    Stage III and IV (clinical jaundice): resection + preoperative percutaneous transhepatic biliary drainage (clear obstruction)

    May use adjuvant XRT with or without chemotherapy for improved local control

UNRESECTABLE
    Palliative surgery for biliary occlusion
    XRT may be used to augment percutaneous transhepatic bilary bypass
    Systemic chemotherapy: gemcitabine + cisplatin

PANCREATIC (DUCTAL) ADENOCARCINOMA

EPIDEMIOLOGY

Highest mortality amongst the major malignancies
- 2% of newly diagnosed carcinoma, but 5% of deaths
- Survival at 5 yrs < 5%

M > F : incidence and mortality

Increased prevalence in African Americans

RF for PANCREATIC ADENOCARCINOMA
- Smoking
- Sedentary Lifestyle
- Obesity
- High-Fat Diet
- Hereditary Pancreatitis : 50% risk over lifetime
- Non-Hereditary Pancreatitis
- (DM is a risk association)

PRESENTATION

Jaundice, weight loss, abdominal pain

Anorexia, pruritis, steatorrhea, thrombophlebitis, depression

New onset of difficulty managing DM (dietary or insulin-based control)

- Head lesion: earlier onset of jaundice, steatorrhea, and diagnosis
- Body and tail lesion: higher likelihood of local invasion before diagnosis

TREATMENT

STAGE I: resection: pancreaticoduodenectomy (Whipple Procedure) + adjuvant chemotherapy (gemcitabine or 5-FU)

> STAGE II: palliative biliary bypass, chemoradiation

Pain palliation: XRT, chemotherapy, chemical ablation of splanchnic nerves, celiac nerve block

Metastatic: Systemic chemotherapy (5-FU or gemcitabine)

NEUROENDOCRINE TUMORS

EPIDEMIOLOGY

These are the most common primary malignancy of the distal small bowel
Resection is usually curative in the early stages
Rates of metastasis are related to size of the primary (mets if > 2 cm)
> 90% arise in the appendix > small bowel > rectum
Carcinoid syndrome occurs in < 10% of cases

PRESENTATION

Chronic symptoms of obstruction or intussusceptions
Carcinoid syndrome: flushing, diarrhea, bronchoconstriction (asthma), cardiac valve lesions, arthropathy, telangietasia

Rarely occurs without liver mets
(EXCEPT if there is direct drainage into the caval circulation: pulmonary, ovarian, retroperitoneal, extensive boney mets)

DIAGNOSIS

Carcinoid tumors (EXCEPT rectum) secrete 5-HT and Kallikrein
Dx carcinoid syndrome: elevated 24-hr 5-hydroxyindoleacetic acid levels

TREATMENT

Surgical resection of localized disease yields very good 5-yr survival rates
Metastatic disease is indolent; survival is > 2 yrs
Palliation: XRT, combination chemotherapy
Carcinoid Syndrome: parenteral somatostatin analog (octreotide)