COLLECTING CANCER DATA: PANCREAS

2017-2018 NAACCR WEBINAR SERIES

Q&A

- Please submit all questions concerning webinar content through the Q&A panel.
- Reminder:
- If you have participants watching this webinar at your site, please collect their names and emails.
- We will be distributing a Q&A document in about one week. This document will fully answer questions asked during the webinar and will contain any corrections that we may discover after the webinar.

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Fabulous Prizes

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AGENDA

- Overview
  - Anatomy
  - Histology
  - Epi moment
- Quiz 1
- Stage
- Treatment
- Quiz 2
- Case Scenarios

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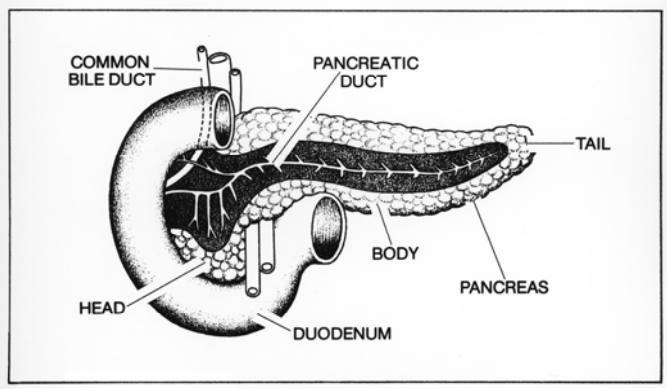
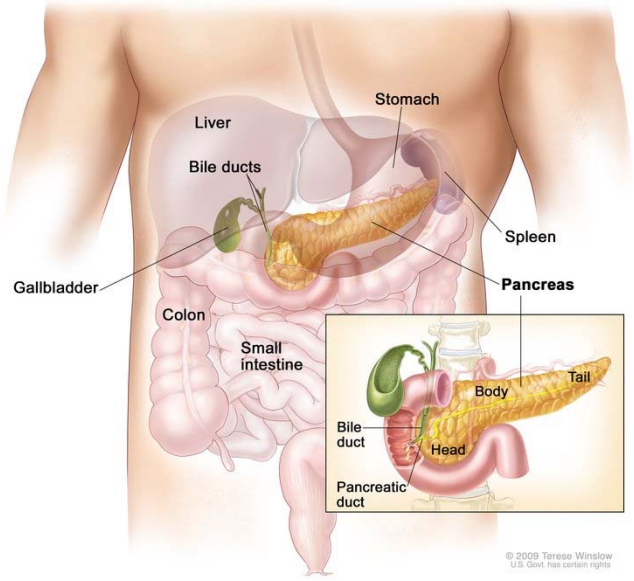
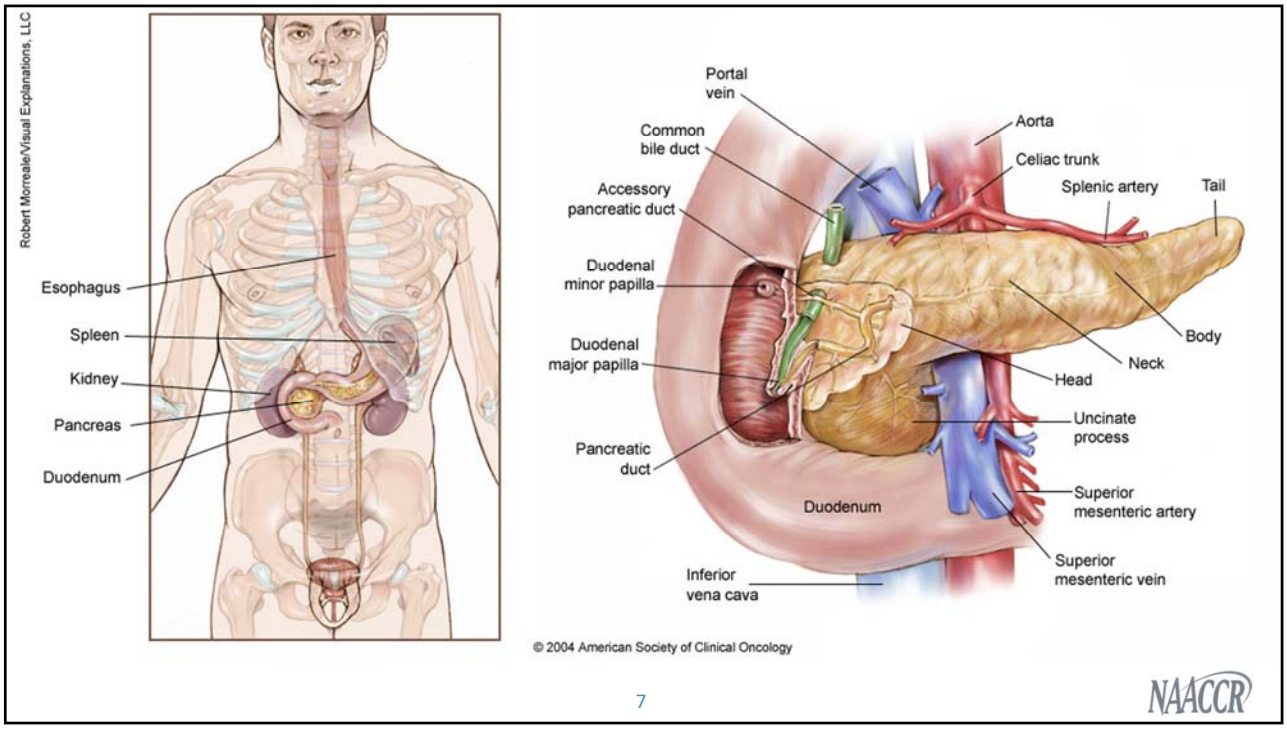


OVERVIEW

ANATOMY AND FUNCTION




Robert Morreale/Visual Explanations, LLC
Esophagus
Spleen
Kidney
Pancreas
Duodenum
Portal vein
Common bile duct
Accessory pancreatic duct
Duodenal minor papilla
Duodenal major papilla
Pancreatic duct
Aorta
Celiac trunk
Splenic artery
Tail
Body
Neck
Head
Uncinate process
Duodenum
Superior mesenteric artery
Superior mesenteric vein
Inferior vena cava
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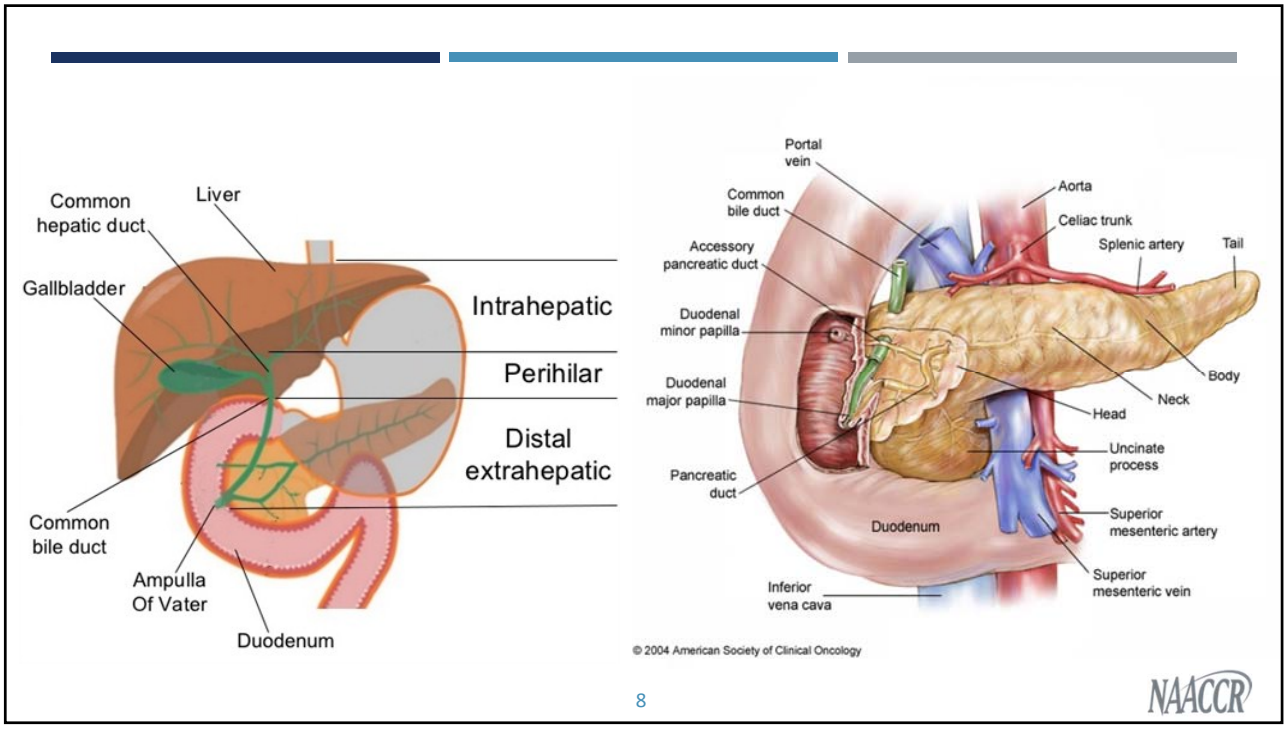
Common hepatic duct
Liver
Gallbladder
Intrahepatic
Perihilar
Distal extrahepatic
Common bile duct
Ampulla Of Vater
Duodenum
Portal vein
Common bile duct
Accessory pancreatic duct
Duodenal minor papilla
Duodenal major papilla
Pancreatic duct
Aorta
Celiac trunk
Splenic artery
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Body
Neck
Head
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Duodenum
Superior mesenteric artery
Superior mesenteric vein
Inferior vena cava
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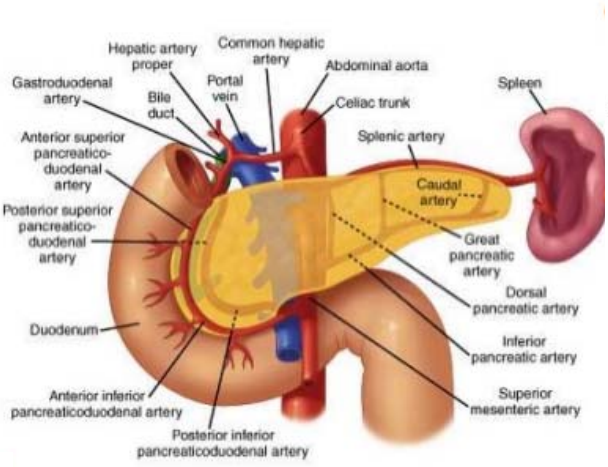
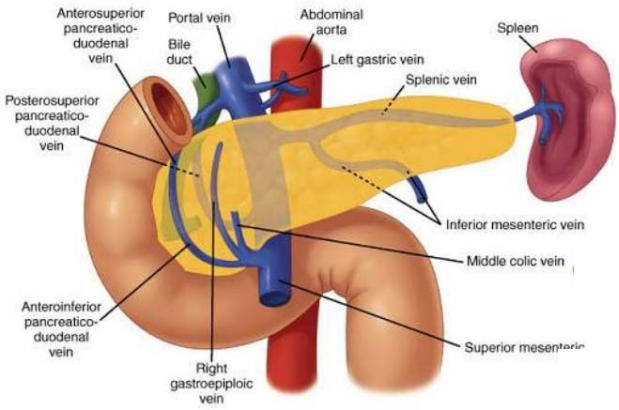
ARTERIAL SUPPLY



VENOUS DRAINAGE



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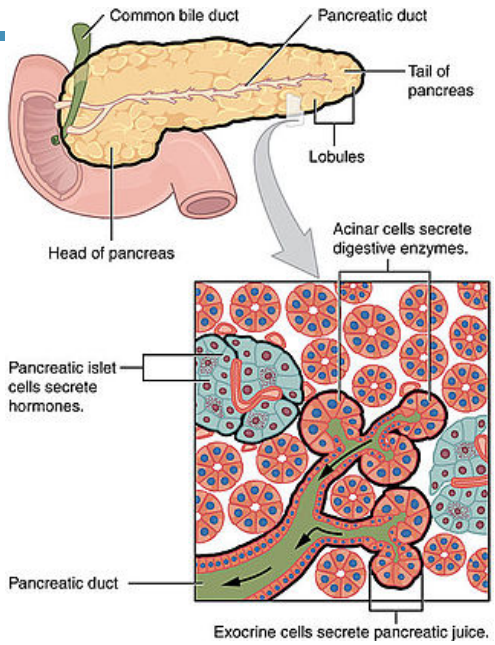
ROLES OF THE PANCREAS

- Exocrine
  - Aids in digestion
    - Secretion of enzymes
- Endocrine
  - Blood sugar control & metabolism
    - Secretion of insulin & other hormones



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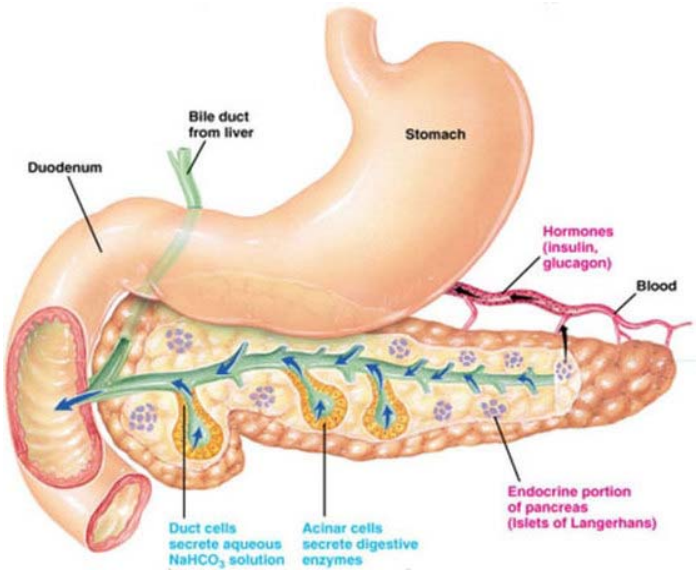

[Frank, A., Deng, Sh. et al. 2004, Transplantation for type I diabetes: comparison of vascularized whole-organ pancreas with isolated pancreatic islets. 240: 631-643.]

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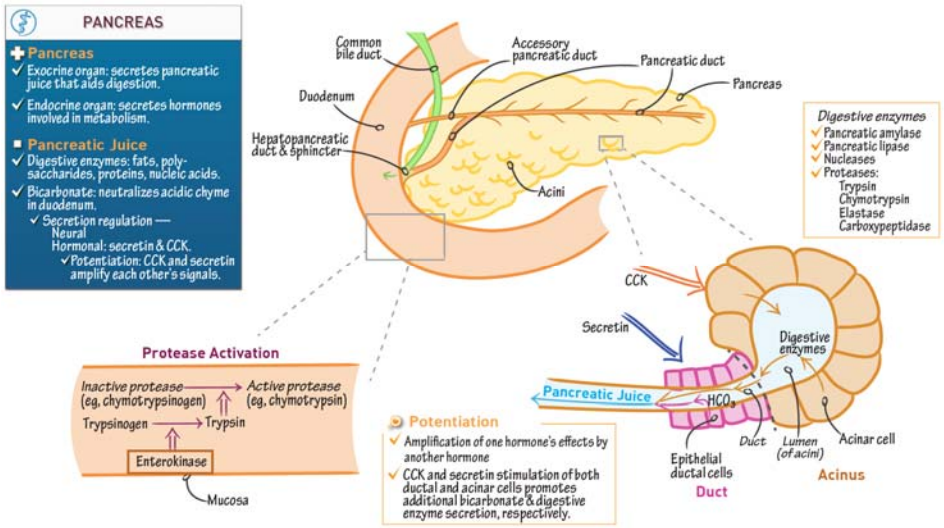
EXOCRINE FUNCTION OF THE PANCREAS



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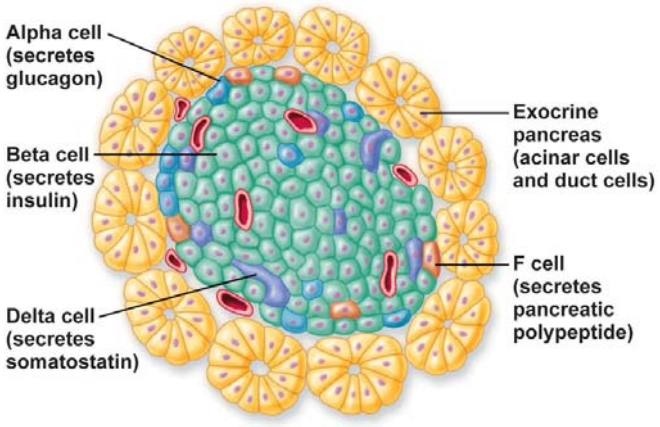
ENDOCRINE FUNCTION OF THE PANCREAS

- Blood Sugar Regulation & Metabolism



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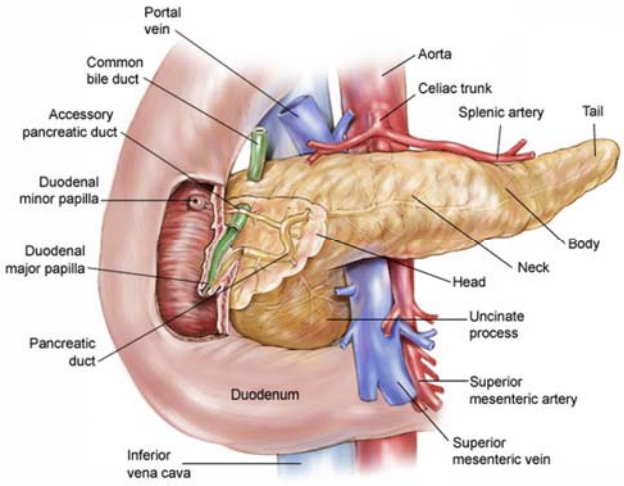
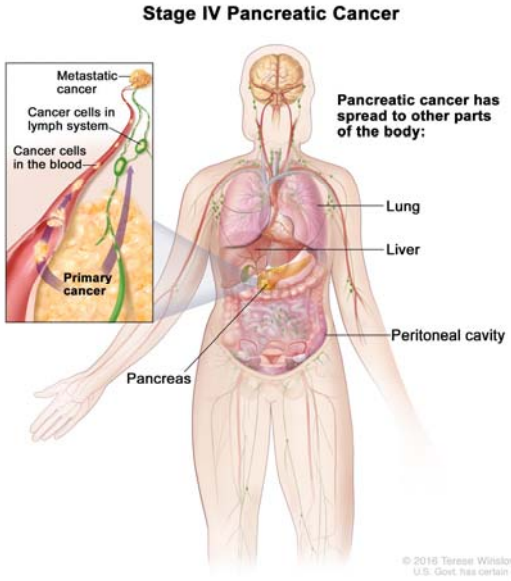
REGIONAL LYMPH NODES

- Superior mesenteric
- Anterior and posterior pancreaticoduodenal
- Pyloric
- Proximal mesenteric
- Common bile duct lymph nodes
- Splenic hilar, pancreatic tail, peripancreatic, hepatic artery, retroperitoneal, lateral aortic
- Head only
  - Infrapyloric, subpyloric, celiac
- Body & Tail only
  - pancreaticolienal, splenic



DISTANT METASTASIS

- Liver
- Peritoneal Cavity
- Lungs



HISTOLOGY

IMPORTANT REMINDER

Please check the 2018 ICD-O-3 Update Table first to determine if the histology is listed. If the histology is not included in the update, then review the ICD-O-3 and/or Hematopoietic and Lymphoid Database and/or Solid Tumor (MP/H) rules.

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NEW HISTOLOGIES WITH PANCREAS

New Term (C25._)

- 8453/3 Intraductal papillary mucinous neoplasm (IPMN) with an associated invasive carcinoma
- 8453/2 Intraductal papillary mucinous neoplasm with high-grade dysplasia
- 8503/2 Intraductal tubulopapillary neoplasm
- 8470/3 Mucinous cystic tumor with associated invasive carcinoma

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EXAMPLE

- Final Diagnosis: biopsy, body of pancreas, mixed acinar ductal carcinoma

Primary Site	2018 Histology	2017 Histology
C25.1	8552/3	8523/3

Status	ICD-O-3 Morphology Code	Term	Reportable Y/N	Comments
New code/term	8552/3	**Mixed acinar ductal carcinoma**	Y	Cases diagnosed prior to 1/1/2018 use code 8523/3

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POP QUIZ

- Final Diagnosis: Ductal carcinoma of the pancreas

Primary Site	2018 Histology	2017 Histology
C25.9	8500/3	8500/3

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QUESTIONS?

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EPI MOMENT…

THEME SONG: TRUCKIN'

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DESCRIPTIVE EPIDEMIOLOGY

- Analyzed alone; tobacco-associated (C25._)
- Incidence 10th
  - 14.5 per 100,000 men; ↑ 1%
  - 11.2 women; ↑ 1.1%
  - 17.0 black men; ↑ .6%
  - 14.6 black women; ↑ 0.8%
- Mortality 4th:
  - 12.6 per 100,000 men; ↑ 0.2%
  - 9.5 women; ↑ 0.2%
  - 14.8 black men; ↓ 0.5%
  - 12.2 black women; ↓ 0.2%
- I/M Ratio >1.0

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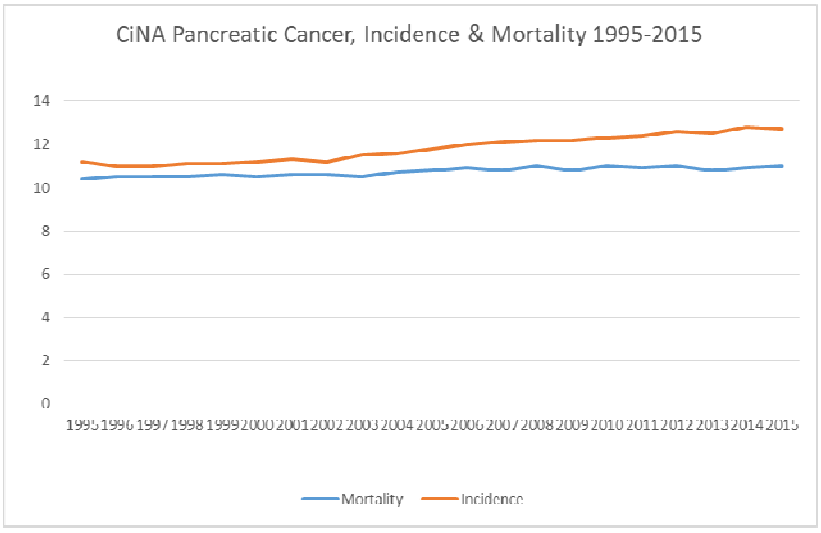
INCIDENCE & MORTALITY: US



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ETIOLOGY/RISK FACTORS

- Most cases are sporadic
- KRAS mutation ≈85-95%%
- Heredity: 2+ family (6x), BRCA2 (3.5x), PRSS1, STK11, CDKN2A, CTFR, MLH1, APC
- Chronic pancreatitis, smoking (2x), obesity (2x)
- Diabetes: Diabetes dx often temporally close (reverse causation)
- Occupational chemical exposures
- Infectious (*H pylori, HBV*)?
- NO RISK: alcohol, coffee or radiation

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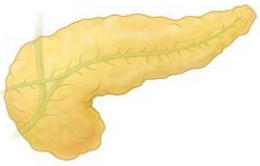
HISTOLOGY



- Exocrine
  - Ductal adenocarcinoma
    - >90% of all pancreatic cancers
    - 75% in head of pancreas
  - Cystic <1%
- Endocrine
  - Islet-cell/neuroendocrine are rare

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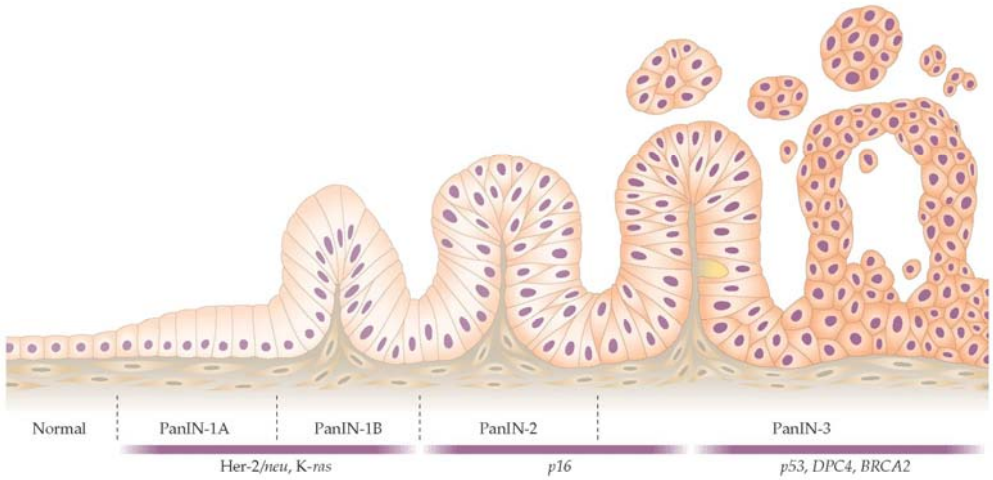
PROGRESSION: PanIN TO INVASIVE DUCTAL ADENOCARCINOMA



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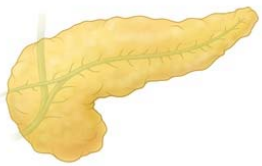
SCREENING



- Population-based
  - none
- High-risk
  - Experimental
  - Mutations (Kras, p53, p16)
  - Protein patterns
  - Blood marker (CA19-9—but generally as guide for disease progression)
  - MiRNA

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SIGNS & SYMPTOMS

- Average age at dx: 71
  - Generally asymptomatic until late stage
- Jaundice
- Abdominal pain and/or lower back pain
- Rapid weight loss
- Bloating
- Loss of appetite and/or nausea
- Discolored stool
- Dermatitis
- Diabetes

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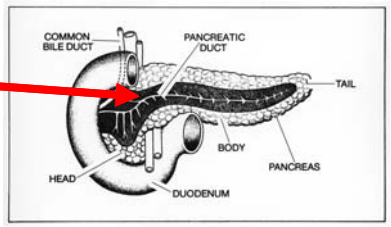
TESTS

- PE: palpable mass
- CT, Ultrasound
- MRCP: magnetic resonance cholangiopancreatography
- ERCP: endoscopic retrograde cholangiopancreatography
- Blood tests: amylase & lipase
- Biopsy: surgical or needle



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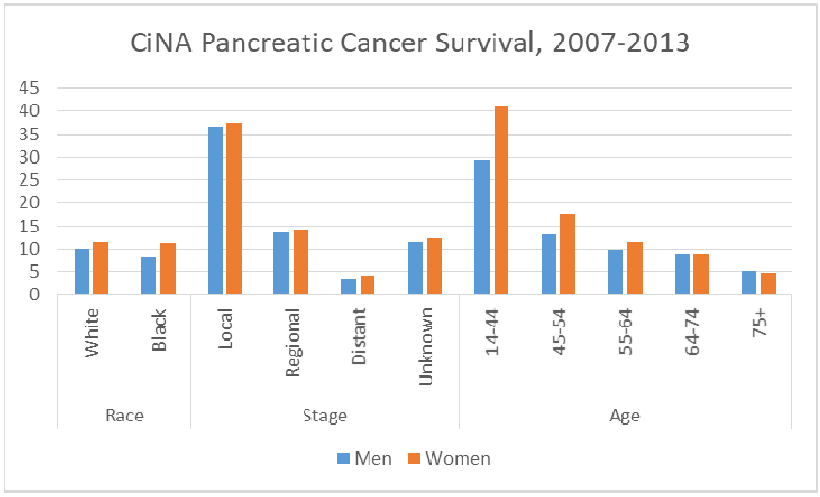
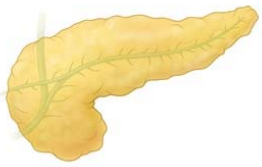
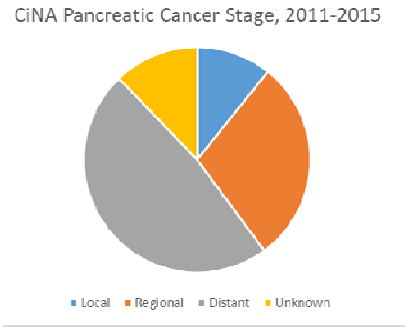
SURVIVAL







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PATRICK SWAYZE VERSUS STEVE JOBS

- Disease of same name but not the same
- Jobs—neuroendocrine/islet cell
  - Rarer, slower growing, easier to treat
  - 8 years; age 56; non-smoking vegan
- Swayze—ductal adenocarcinoma
  - Median survival 5 months
  - 20 months; age 57; active but smoker
  - Gemcitabine

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SUMMARY STAGE

PANCREAS

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SUMMARY STAGE 2000

Pancreas: head, body, and tail

- C25.0 Head of pancreas
- C25.1 Body of pancreas
- C25.2 Tail of pancreas
- C25.3 Pancreatic duct
- C25.4 Islets of Langerhans

Pancreas: other and unspecified

- C25.7 Other and unspecified parts of pancreas (neck)
- C25.8 Overlapping lesion of pancreas
- C25.9 Pancreas, NOS

https://seer.cancer.gov/tools/ssm/digestive.pdf

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SUMMARY STAGE 2018

- Pancreas (including NET Pancreas)
  - C250 Head of pancreas
  - C251 Body of pancreas
  - C252 Tail of pancreas
  - C253 Pancreatic duct
  - C254 Islets of Langerhans
  - C257 Other specified parts of pancreas
  - C258 Overlapping lesion of pancreas
  - C259 Pancreas, NOS

https://staging.seer.cancer.gov/eod_public/list/1.0/

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POP QUIZ

- Ultrasound: 6 cm mass located in the tail of the pancreas. The tumor directly invades the spleen with adenopathy of splenic nodes, most likely malignant. No liver metastasis.
- Biopsy of pancreatic tail mass: Adenocarcinoma

  - Summary Stage 2000
  - Summary Stage 2018

4-Regional by BOTH direct extension
AND regional lymph node(s) involved

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AJCC STAGING

CHAPTER 28: EXOCRINE PANCREAS PAGE 337

CHAPTER 34: NEUROENDOCRINE TUMORS OF THE PANCREAS PAGE 407

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AJCC 8TH EDITION ERRATA

- Chapter 28-Exocrine Pancreas
  - No Errata
- Chapter 34-Neuroendocrine Tumors of the Pancreas
  - T3: Tumor limited to the pancreas,* >4 cm; or tumor invading the duodenum or common bile duct

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SITE/HISTOLOGIES ELIGIBLE FOR STAGING

- A site and histology combination must be assigned a Disease Number (AJCC ID) to be assigned an AJCC Stage.

https://cancerstaging.org/references-tools/deskreferences/Pages/8EUpdates.aspx

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POP QUIZ 1

- A registrar is abstracting a 2018 pancreas primary. She has entered primary site code of C25.0 and the histology is 8070/3.
- When she gets to the TNM Fields she gets a message that the case is not eligible for an AJCC Stage.
  - Is this correct?
  - What if the physician assigned an AJCC Stage?

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CHAPTER 28 EXOCRINE PANCREAS

PAGE 337

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SUMMARY OF CHANGES

- Reclassification of the T values
- Reclassification of the N values

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NEUROENDOCRINE CARCINOMA

- Chapter 34-Neuroendocrine Tumors Pancreas
  - Neuroendocrine Tumor, well differentiated (8240/3)
  - Neuroendocrine Tumor, moderately differentiated (8249/3)
- Chapter 28-Exocrine Pancreas
  - Neuroendocrine Tumor, NOS (8246/3)
  - Neuroendocrine Tumor, poorly differentiated (8246/3)

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RULES FOR CLASSIFICATION

- General Rules
- Clinical
  - Must have a diagnosis of cancer
  - Must have some kind of work-up
- Pathological
  - Resection of the primary tumor or
  - Pathologic confirmation of distant mets

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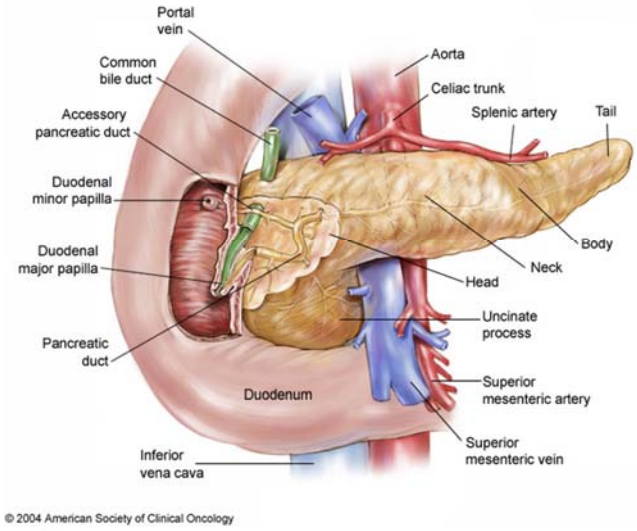
CLINICAL WORK-UP

- Imaging
- Endoscopic ultrasound and fine needle aspiration
- Staging laparoscopy
- ERCP



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POP QUIZ 2

- Imaging shows a 3.2cm malignant appearing tumor in the body of pancreas.
  - The tumor encases the superior mesenteric artery.
  - No enlarged lymph nodes or metastasis identified.
- An exploratory laparotomy showed metastatic nodules on the surface of the liver.
- A biopsy of a metastatic nodule showed metastatic ductal carcinoma.

Data Item	8th ed
Clinical T	**cT4**
Clinical N	**cN0**
Clinical M	**pM1**
Stage	**4**
Path T	**cT4**
Path N	**cN0**
Path M	**pM1**
Stage	**4**

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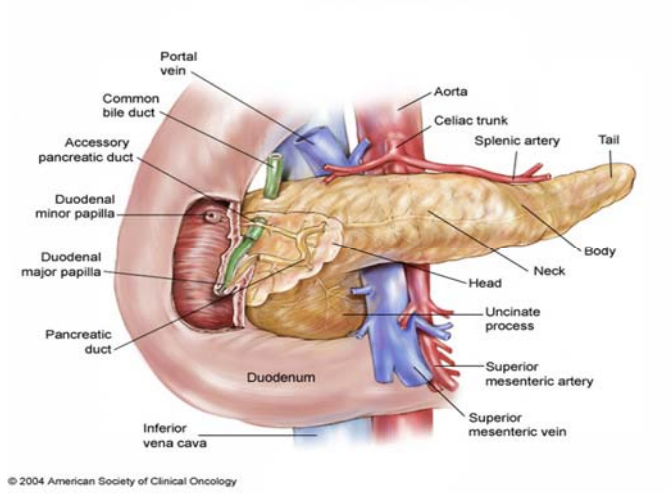
PREOPERATIVE NEOADJUVANT TREATMENT

- Borderline resectable
- Resectable



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PATHOLOGIC STAGING

- Resection of the primary tumor and regional nodes required if patient does not have pathologic confirmation of distant mets.

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ASSIGNING VALUES

- T value
  - Non-invasive
  - Invasive tumor: based on tumor size
- N value is based on number of positive lymph nodes
- M value is absence or presence of distant mets
- Stage group is based on T,N, and M only

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POP QUIZ 3

- Imaging shows a 1.7 cm tumor in the tail of pancreas.
  - The tumor abuts the superior mesenteric artery. There is less than 180° of involvement. No additional arterial or celiac axis involvement.
  - No enlarged lymph nodes or metastasis identified.
- An EUS-FNA confirms poorly differentiated acinar carcinoma
- The patient is treated with neoadjuvant chemoradiation.

Data Item	8th ed
Clinical T	**cT4**
Clinical N	**cN0**
Clinical M	**cM0**
Stage	**3**
Path T	
Path N	
Path M	
Stage	

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POP QUIZ 3 (CONT)

- The patient went on to have a distal pancreatectomy.
  - Pathology did not show any residual tumor.
  - 17 lymph nodes were resected. No malignancy was identified.

Pathological Stage group is blank!

Data Item	8th ed
Clinical T	**cT4**
Clinical N	**cN0**
Clinical M	**cM0**
Stage	**3**
Post-therapy T	**ypT0**
Post-therapy N	**ypN0**
Post-therapy M	**cM0**
Post-therapy Stage	**99**

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SITE SPECIFIC DATA ITEMS/GRADE

- No SSDI's related to pancreas
- Standard Grade data items

Code	Description
1	G1: Well differentiated
2	G2: Moderately differentiated
3	G3: Poorly differentiated
9	Grade cannot be assessed (GX); Unknown

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GRADE

- A patient is found to have a tumor in the pancreas.
  - A biopsy confirms poorly differentiated mucinous carcinoma.
- The patient had neoadjuvant treatment followed by a whipple procedure.
  - Pathology shows a moderately differentiated mucinous carcinoma.

Data Item	8th ed
Clinical Grade	3
Pathological Grade	9
Post-therapy Grade	2

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QUESTIONS?

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CHAPTER 34: NEUROENDOCRINE TUMORS OF THE PANCREAS

PAGE 407

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SUMMARY OF CHANGES

- New Chapter (previously included with exocrine/endocrine chapters)
- No Tis
- Subdivision of the M category

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RULES FOR CLASSIFICATION

- General Rules
- Clinical
  - Must have a diagnosis of cancer
  - Must have some kind of work-up
- Pathological
  - Resection of the primary tumor or
  - Pathologic confirmation of distant mets

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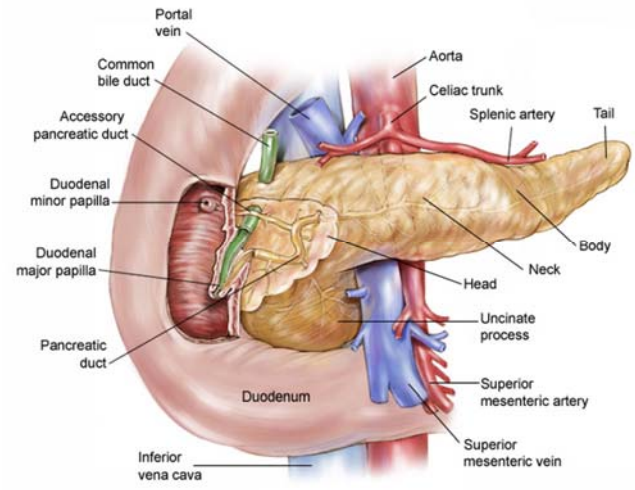
CLINICAL WORK-UP

- Imaging
- Endoscopic ultrasound and fine needle aspiration
- Staging laparoscopy
- ERCP



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PATHOLOGIC STAGING

- Resection of the primary tumor and regional nodes required if patient does not have pathologic confirmation of distant mets.

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ASSIGNING VALUES

- T value
  - Tumor size
  - Invasion of duodenum or common bile duct
  - Invasion of adjacent organs or vessels
- N value is based on number of positive lymph nodes
- M value is absence or presence of distant mets and where metastasis occurs
- Stage group is based on T,N, and M only

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POP QUIZ 4

- A patient had a CT that showed a 6.5cm tumor in the tail of the pancreas that invaded into the duodenum. Several hypervascular lesions suspicious for metastasis were seen in the liver.
- An EUS-FNA of the pancreatic tumor revealed a well differentiated neuroendocrine carcinoma.

Data Item	8th ed
Clinical T	**cT3**
Clinical N	**cN0**
Clinical M	**cM1a**
Stage	**4**

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POP QUIZ 4 (cont)

- The surgeon performed a distal pancreatectomy with splenectomy combined with left lateral hepatectomy and intraoperative radiofrequency ablation of 2 tumors in the right lobe.
- Pathologic analysis confirmed metastatic well-differentiated pancreatic NET with 2 mitoses per 10 high-powered fields.
  - Tumor size: 6.5cm
  - Extension: There was invasion into, but not through the duodenum wall.
  - 4 of 22 common hepatic lymph nodes were positive for metastasis.

Data Item	8th ed
Clinical T	**cT3**
Clinical N	**cN0**
Clinical M	**cM1a**
Stage	**4**
Path T	**pT3**
Path N	**pN1**
Path M	**cM1a**
Stage	**4**

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SITE SPECIFIC DATA ITEMS/GRADE

- Grade

Code	Description
1	**G1: Mitotic count (per 10 HPF) less than 2 AND Ki-67 index (%) less than 3**
2	**G2: Mitotic count (per 10 HPF) equal 2-20 OR Ki-67 index (%) equal 3-20**
3	**G3: Mitotic count (per 10 HPF) greater than 20 OR Ki-67 index (%) greater than 20**
A	Well differentiated
B	Moderately differentiated
C	Poorly differentiated
D	Undifferentiated, anaplastic
9	Grade cannot be assessed (GX); Unknown

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POP QUIZ 5

- An EUS-FNA of the pancreatic tumor revealed a well differentiated neuroendocrine carcinoma.
- Pathologic analysis confirmed metastatic well-differentiated pancreatic NET with 2 mitoses per 10 high-powered fields. Ki-67 was 14%

Data Item	8th ed
Clinical Grade	**A**
Pathological Grade	**2**
Post-therapy Grade	

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QUESTIONS?

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TREATMENT

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TREATMENT

- Poor survival rate with any stage of pancreatic exocrine cancer
- Pain control important part of treatment
- Clinical trials
  - Appropriate treatment alternatives for patients with any stage of disease

TREATMENT

- Surgical resection is only potentially curative technique
  - More than 80% of patients present with disease that cannot be cured with resection
  - Median survival of resected patients ranges from 15-19 months
- Ablation/emobolization
- Radiation
- Chemo & other drugs

SURGICAL STATUS

- Resectable
  - Tumor within or limited extension beyond pancreas
  - Patient is healthy (major operation)
  - Based on the high probability of obtaining negative resection margins (R0)—using imagery
- Borderline resectable
  - Reached but not deep/surrounding blood vessels
  - Neoadjuvant chemo (sometimes w/radiation) often first or followed
- Unresectable
  - Surgery palliative
  - Chemo often followed by chemoradiation (but higher risk of side effects)

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CRITERIA FOR RESECTION

- No peritoneal or hepatic metastasis
- No abutment, distortion, thrombus, or venous encasement of the portal or superior mesenteric vein
- Must have a clear fat plane around the celiac axis, hepatic artery, and superior mesenteric vein
- Surgery may determine not resectable
  - Surgery stopped or modified to palliative

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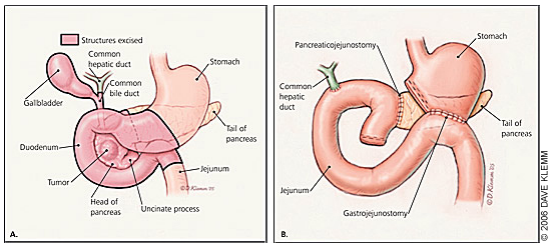
WORK-UP

- Pancreatic protocol CT
- Pancreas protocol MRI
- Endoscopic ultrasound (EUS)
- Endoscopic retrograde cholangiopancreatography (ERCP)
- Biopsy
  - CT guided
  - EUS guided (preferred)

SURGERY

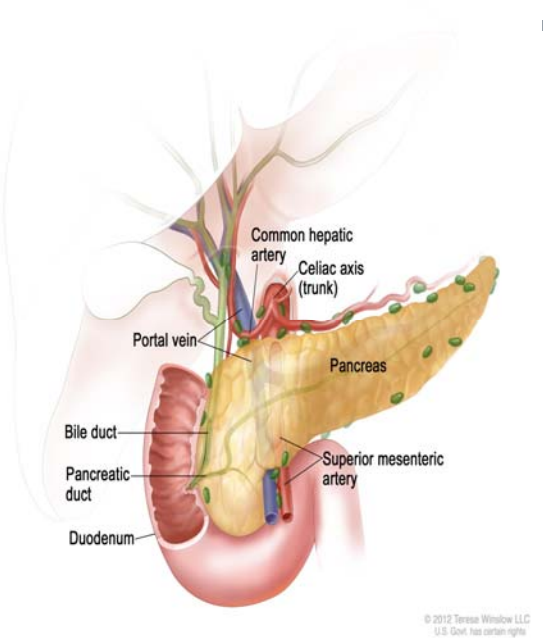
- Pancreatoduodenoctomy (Whipple procedure)
  - Removal of:
    - Distal half of the stomach (antrectomy)
    - Gall bladder and its cystic duct (cholecystectomy)
    - Common bile duct (choledochectomy)
    - Head of the pancreas
    - Duodenum
    - Proximal jejunum
    - Regional lymph nodes



http://www.aafp.org/afp/2006/0201/p485.html

SURGERY

- Distal pancreatectomy
  - Removal of the body and tail of the pancreas and spleen
- Total pancreatectomy
  - Similar to a Whipple, but the entire pancreas is removed
  - Patient will be required to take supplemental enzymes and insulin



CHEMOTHERAPY/RADIATION

- Adjuvant Therapy
  - Chemotherapy
  - Chemoradiation
  - IMRT
- Neoadjuvant Therapy
  - Performed on patients that are borderline surgical candidates
  - Chemoradiation

CHEMOTHERAPY/RADIATION

- Primary Treatment
  - Intent is palliative and improved survival
- Chemotherapy
  - 5-FU & Gemcitabine
  - Clinical trials
- Chemoradiation
- Radiation
  - IMRT

RADIATION THERAPY

- Generally external beam, brachytherapy rare
- IMRT
  - Minimizes the dose to proximal healthy tissue
  - Fewer side effects & higher dose to tumor
- SBRT
  - Used with smaller tumors (“cyberknife”)
  - Not better than standard; ulcers in duodenum
  - Still under investigation
- Proton beam
  - Clinical Trials

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CHEMOTHERAPY

- Abrazane (albumin-bound paclitaxel)
- Gemzar (gemcitabine)—1996
  - Combined with radiation
  - Combined with Tarceva for metastatic
- 5-FU (flourouracial)—older; more often combo with radiation
- ONIVYDE (irinotecan liposome injection)—2013
  - 1st line treatment for metastatic; 3 drug combo

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ABLATION OR EMBOLIZATION

- Primarily endocrine
  - Metastatic
- Occasionally for exocrine if extension is only into a few areas
- Ablation
  - Destroy tumors with extreme heat or cold
  - No hospital stay
- Embolization
  - Inject substances into artery to block blood flow to tumor
  - Used for tumors too large for ablation

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METASTATIC

- ONIVYDE (irinotecan liposome injection)
- Chemo—Gemcitabine
  - Alone if poor health
  - Otherwise combined
    - Albumin-bound paclitaxel, erlotinib, or cepectabine
- FOLFIRINOX—standard of care
  - 4 drug combo (5-FU, leucovorin, irinotecan, & oxaliplatin)
  - Must be in good health; side effects an issue

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RECURRENCE OR PROGRESSION

- Depends upon prior treatments
- Where & how much spread
- Emphasis on patient wishes
- Chemo (same or different)
  - Can be for treatment or palliative
- Radiation
  - Palliative
- Clinical Trials

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PANCREATIC NET

- Surgery if resectable
- If not, lab and imaging used to monitor
  - Slow growing
  - Diarrhea or hormone problems
    - Treatment of symptoms also appear to slow growth of tumor
  - Chemo or targeted drugs (sunitinib or everolimus) usually delayed until symptoms are uncontrolled or scans show tumor growth
    - But first treatment if poorly differentiated tumor
    - Somatostatin receptor-positive PNET: radiopharmaceutical Lutathera (lutetium Lu 177 dotatate)
  - Ablation if spread to liver

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AMPULLA OF VATER

- Symptomatic at earlier stage
  - Jaundice
- Surgery generally an option
  - Whipple followed by adjuvant chemoradiotherapy
- Advanced cases are treated like advance pancreatic cancer

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CLINICAL TRIALS

- Recommended at diagnosis & during every treatment decision
  - 71% die within 1 year; outcomes "better" in clinical trial
  - 4.5% of patients enroll
- 181 NCI supported
  - 13 Phase 3
  - 15 Phase 4
- Pancreatic Cancer Action Network
  - Clinical Trial Finder

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QUIZ 2
CASE SCENARIOS

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Fabulous Prizes Winners

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CE CERTIFICATE QUIZ/SURVEY

- Phrase

- Link

https://www.surveygizmo.com/s3/4288842/Pancreas-2018

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