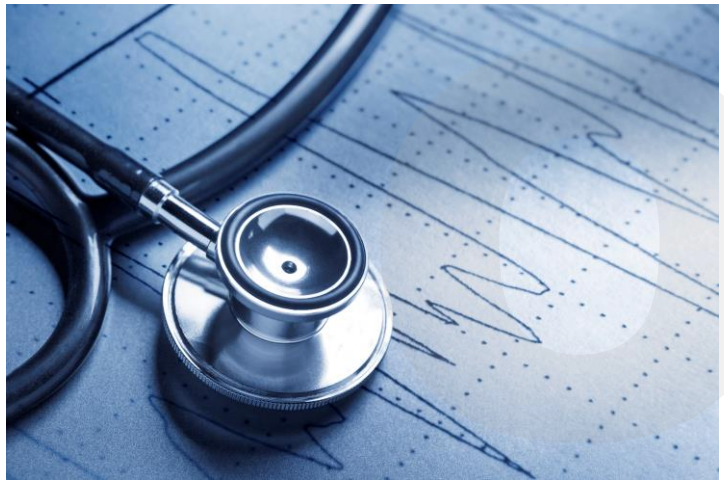
Pancreatic Cancer Screening: Early Detection

DATE: February 2025 PRESENTED BY: Carmen Curry, MS, FNP-BC



Disclosures

I have no disclosures.

Learning Objectives

- Appropriately identify patient populations who should be referred to the High-Risk Pancreas Screening Clinic/Surveillance Clinic
- Increase the number of patients who are diagnosed with pancreatic ductal adenocarcinoma (PDAC) at an early stage, when disease is treatable

Background

1761

In 1761 Giovanni Battista Morgagni published The Seat and Causes of Diseases- discussing pancreatic “scirrhus” which is believed to be the earliest recorded accounts of PDAC

1800s-1900s

Throughout the 1800s-1900s, medical advances related to surgery are achieved; however, PDAC remains difficult to diagnose and surgically resect

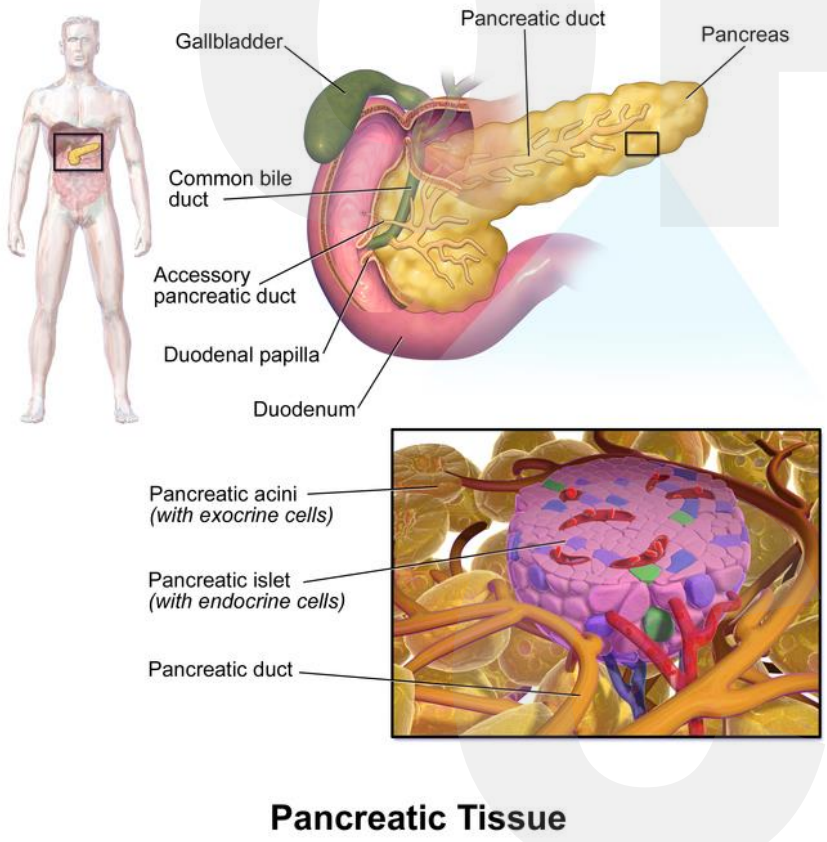
1930s

In the 1930s Allen O. Whipple, refined the pancreaticoduodenectomy procedure

late 20th Century

High volume centers established in the late 20th Century with multidisciplinary approaches helped advance surgery and early detection

Pancreas Basics



Pancreatic Tissue

3 Regions : Head, body, tail

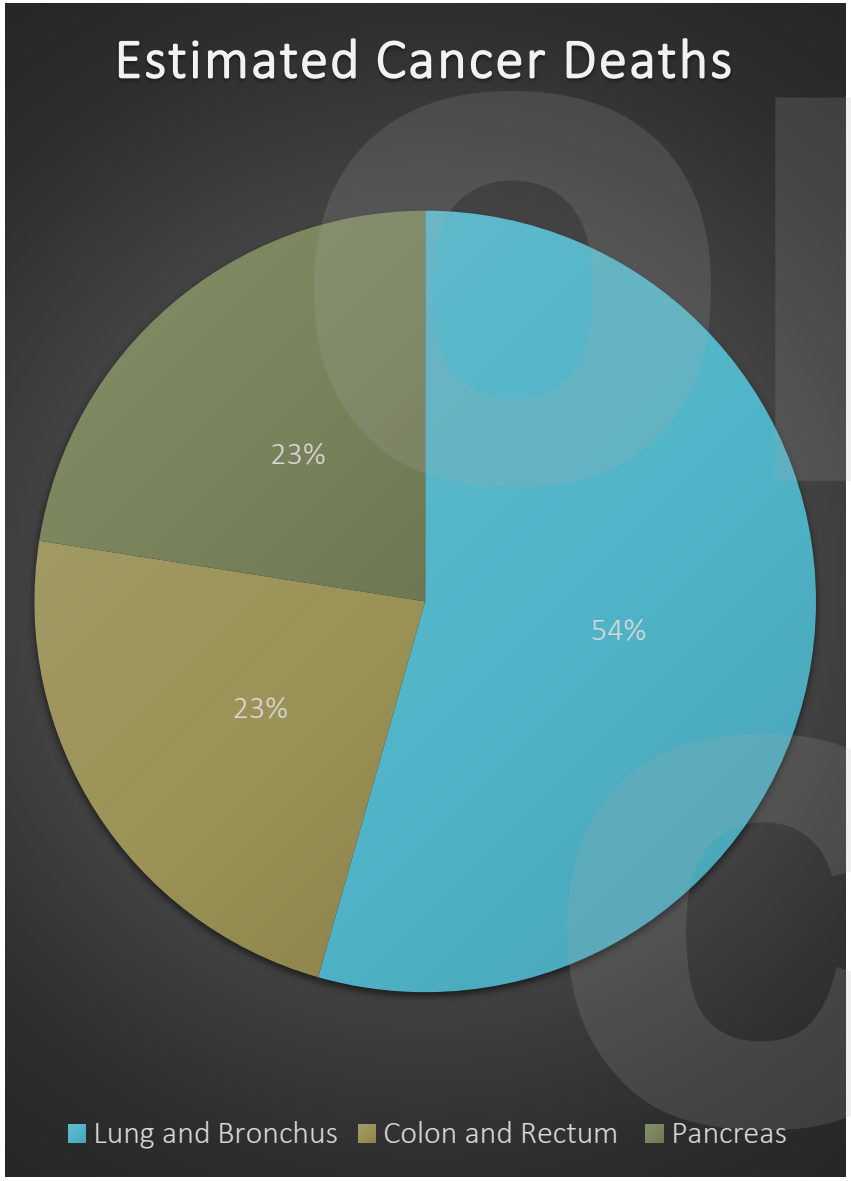
Exocrine 95%: Cells that make up the exocrine gland and ducts of the pancreas, producing enzymes

- Most common- PDAC

Endocrine 5%: Secretes insulin and glucagon

- Better prognosis

Sources:
American Cancer Society: https://www.cancer.org



Pancreatic Ductal Adenocarcinoma (PDAC)

Pancreatic cancer is the 3rd leading cause of cancer related death in the U.S.

Exocrine cases are more common than pancreatic neuroendocrine tumors (pNETs)

5-year survival rate is up to 13%

67,440 new pancreatic cancer cases

51,980 will die from pancreatic cancer

American Cancer Society. *Facts & Figures 2024*. Atlanta: American Cancer Society; 2025.

https://seer.cancer.gov/statfacts/html/pancreas.html

Pancreatic Cancer Risk Factors

Family history of pancreatic cancer

Pancreatitis

Specific gene mutations

Personal or family history of pancreatitis

Tobacco use

Excessive alcohol use

Excess body weight/High BMI

Pancreatic Cancer Risk Factors Continued

Ethnicity (Black Americans, Ashkenazi Jews, and Native Americans)

Native American and Alaskan Native (NA/AN) have the worst survival outcomes for PDAC among all major US racial/ethnic groups

Care impacted by:

- ❑ *Historical traumas (colonization, genocide, sterilization, etc)*
- ❑ *Healthcare system mistrust*
- ❑ *Access to care*

Kills First et al., 2022

Screening for Diabetes

New onset or worsening diabetes

PDAC is diabetogenic

USPSTF Recommendation: Screen adults age 35-70 who are overweight or obese for prediabetes and diabetes (Grade B)

HgbA1c yearly

Nutrition and Physical Activity

- Mediterranean diet
- Increase fiber and protein
- Limit sweets and carbohydrates
- Exercise 30 minutes per day
- Maintain healthy weight

Who Should Be Screened?

- ❑ ≥2 First-degree relatives of the patient, in the absence of a germline variant
- ❑ Three or more first/second degree relatives in the absence of a germline variant
- ❑ One relative affected by pancreatic cancer and a genetic syndrome such as (BRCA 1, PALB2, Lynch Syndrome, etc)
- ❑ Age 50 or 10 years earlier than youngest relative with pancreatic cancer
- ❑ CDKN2A and PRSS1 (age 40); Peutz-Jeghers Syndrome STK11 (age 35)
- ❑ BRCA2 and ATM mutation in the absence of known family history (updated 9/11/24)

Screening/Surveillance

USPSTF recommends against screening for PDAC in asymptomatic adults (Grade D)

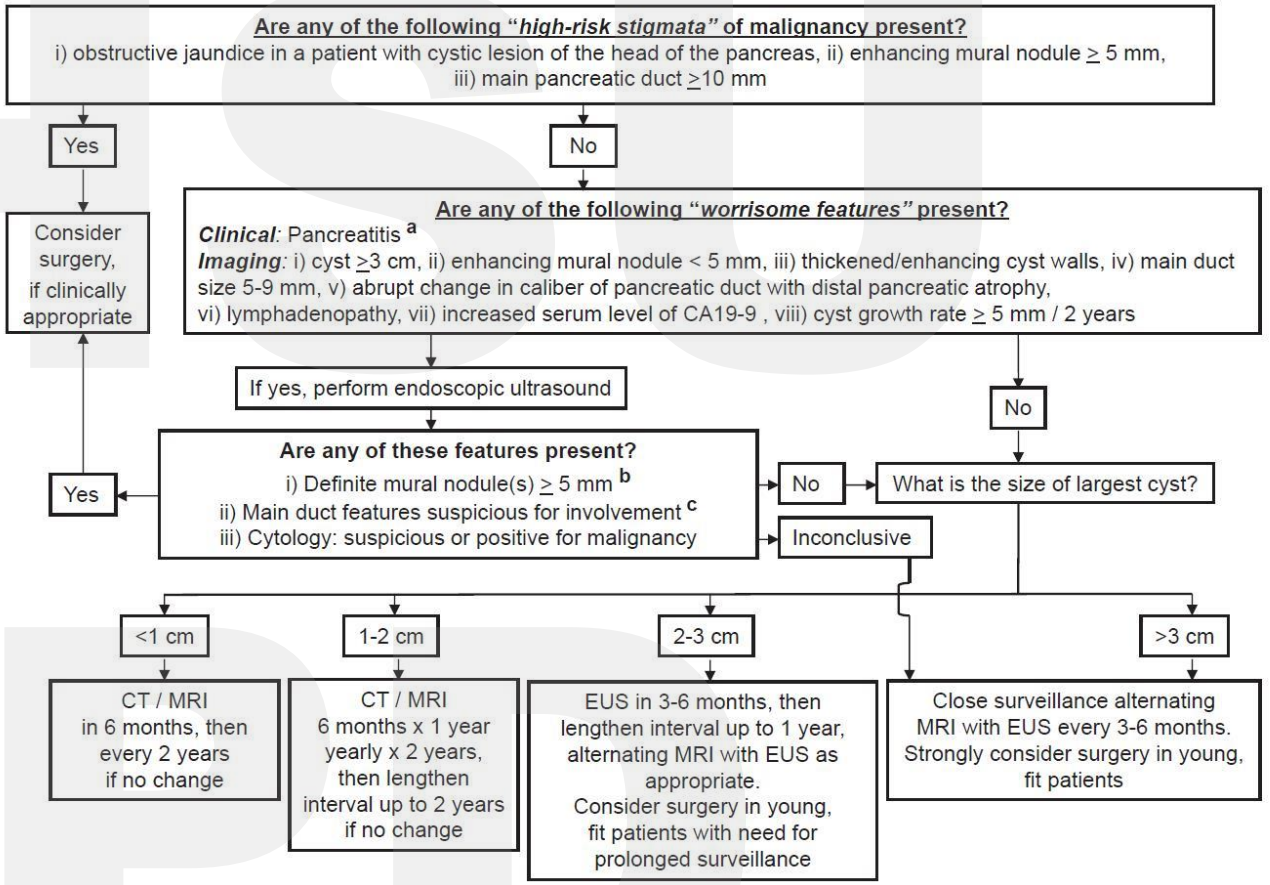
Surveillance

- Pancreatic cysts/lesions
- Pancreatic ductal dilation
  - *Typically managed by size*
  - *Other high-risk stigmata*
  - *Patient's age and functional status*

(*Recommendation: Pancreatic Cancer: Screening | United States Preventive Services Taskforce*, n.d.)

Fukuoka Pancreatic Cyst Surveillance Guidelines

(Tanaka et al., 2017)



Referrals

Medical Genetics

Gastroenterology

PCPs

Self-referred

Oncology

Screening Partners

Screening Modalities

- MRI or CT
- EUS
- HgbA1c
- Referral to Medical Genetics
- Referral to Research Studies
- No indication at present for CA 19-9

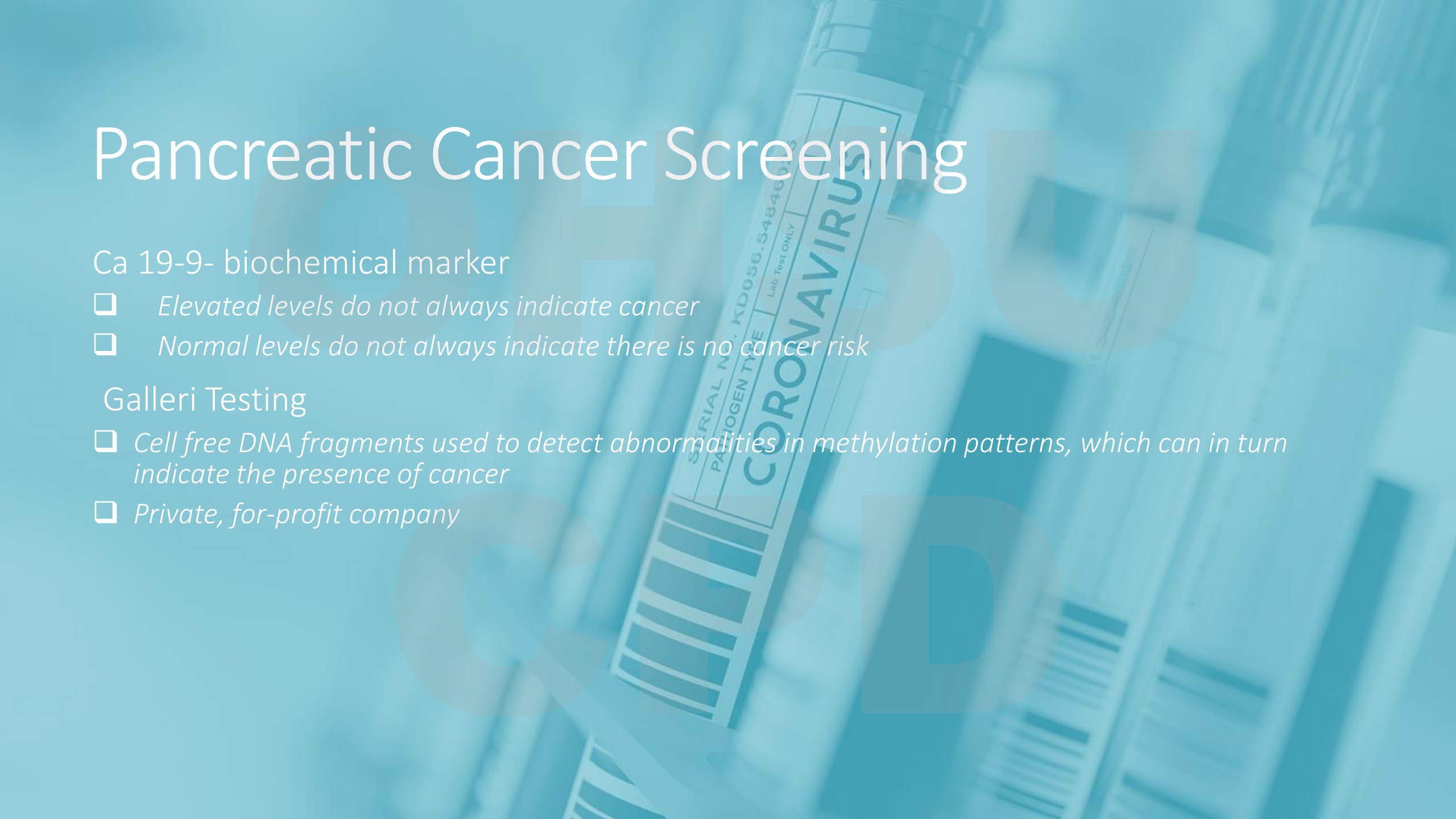
Pancreatic Cancer Screening

Ca 19-9- biochemical marker

- *Elevated levels do not always indicate cancer*
- *Normal levels do not always indicate there is no cancer risk*

Galleri Testing

- *Cell free DNA fragments used to detect abnormalities in methylation patterns, which can in turn indicate the presence of cancer*
- *Private, for-profit company*



Barriers to Screening

- Misinformation/aversion
- Transportation
- Financial concerns
- Anxiety
- Anesthesia-related complications
- Diagnosis and therapy directed towards incidental nonpancreatic findings
- Complications related to testing

Research

Oregon Pancreas Tissue Registry (OPTR)

- OHSU Brenden-Colson Center research for early detection of PDAC and PDAC
  - *PDAC*
  - *Family history of pancreatic cancer*
  - *Chronic pancreatitis/related syndromes*

PRECEDE Consortium

- International research for early detection and prevention of PDAC
  - *Genetic predisposition*
  - *Family history of pancreatic cancer*
  - *Pancreatic cysts*
  - *PDAC*

Research Continued

Pancreatic Cancer Detection Consortium (PCDC)

National Institute of Health (NIH)

Imaging biomarkers and sequencing to detect early stages of PDAC and precursor lesions

Health Oregon Project (HOP)

Oregon Health and Science University (OHSU)

No cost DNA screening for Oregon Residents (adults)

32 genes analyzed for cancer and heart risk

Pancreatic Cancer Symptoms

Severe abdominal pain

Uncontrolled nausea/vomiting

Jaundice

Dark urine

Changes in bowel habits (light colored stools)

Unintentional weight loss

Pancreatic Cancer Management

Surgical Resection

Medical Oncology

Radiation Oncology

Palliative Care

Medical Genetics

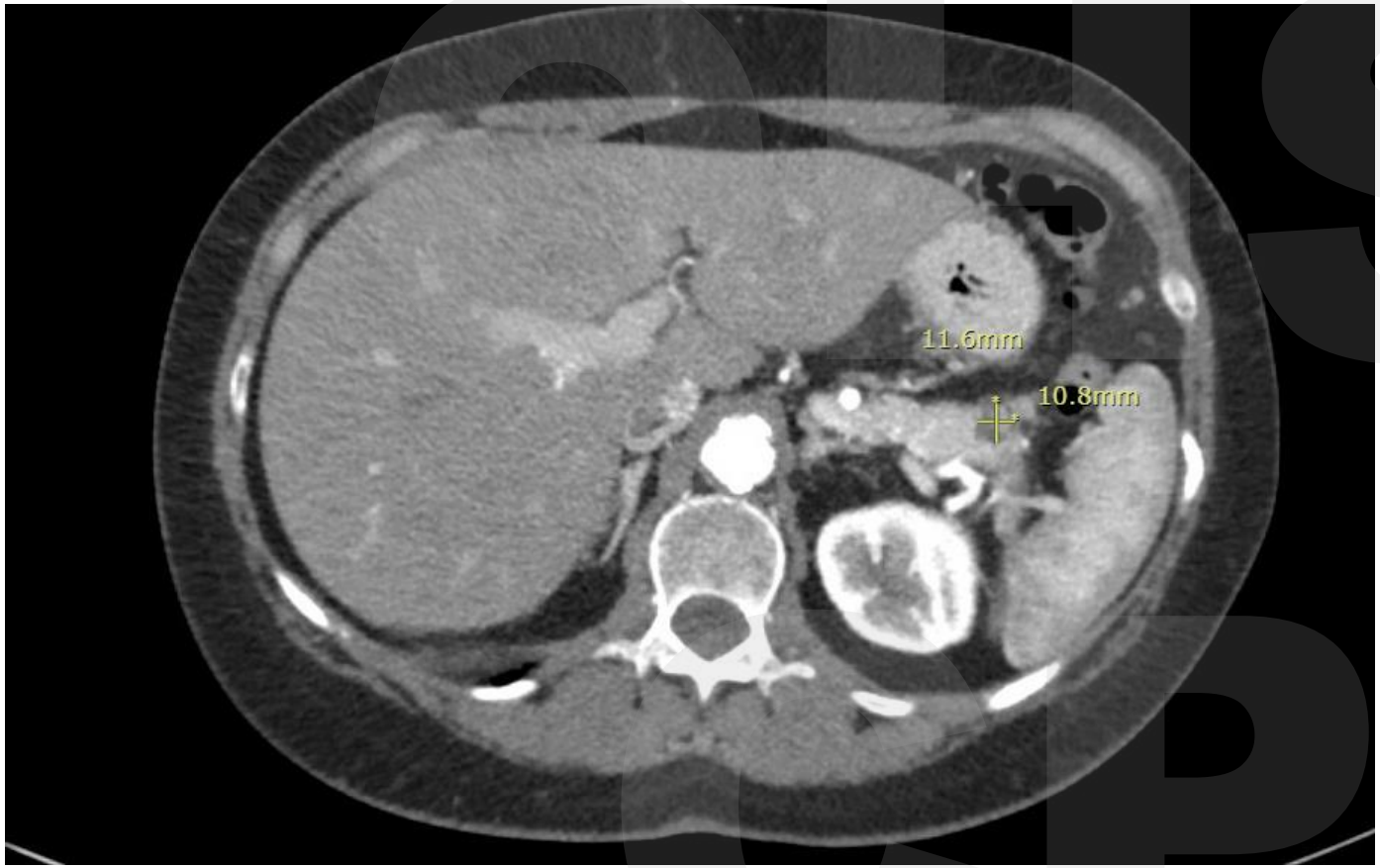
Case Study

65 yo F w/ family hx of PDAC (2 first-degree relatives), BRCA 2 positive

Yearly MRIs unremarkable

EUS/FNA showed hypoechoic pancreatic body and tail lesion

FNA showed high-grade carcinoma consistent with poorly differentiated adenocarcinoma



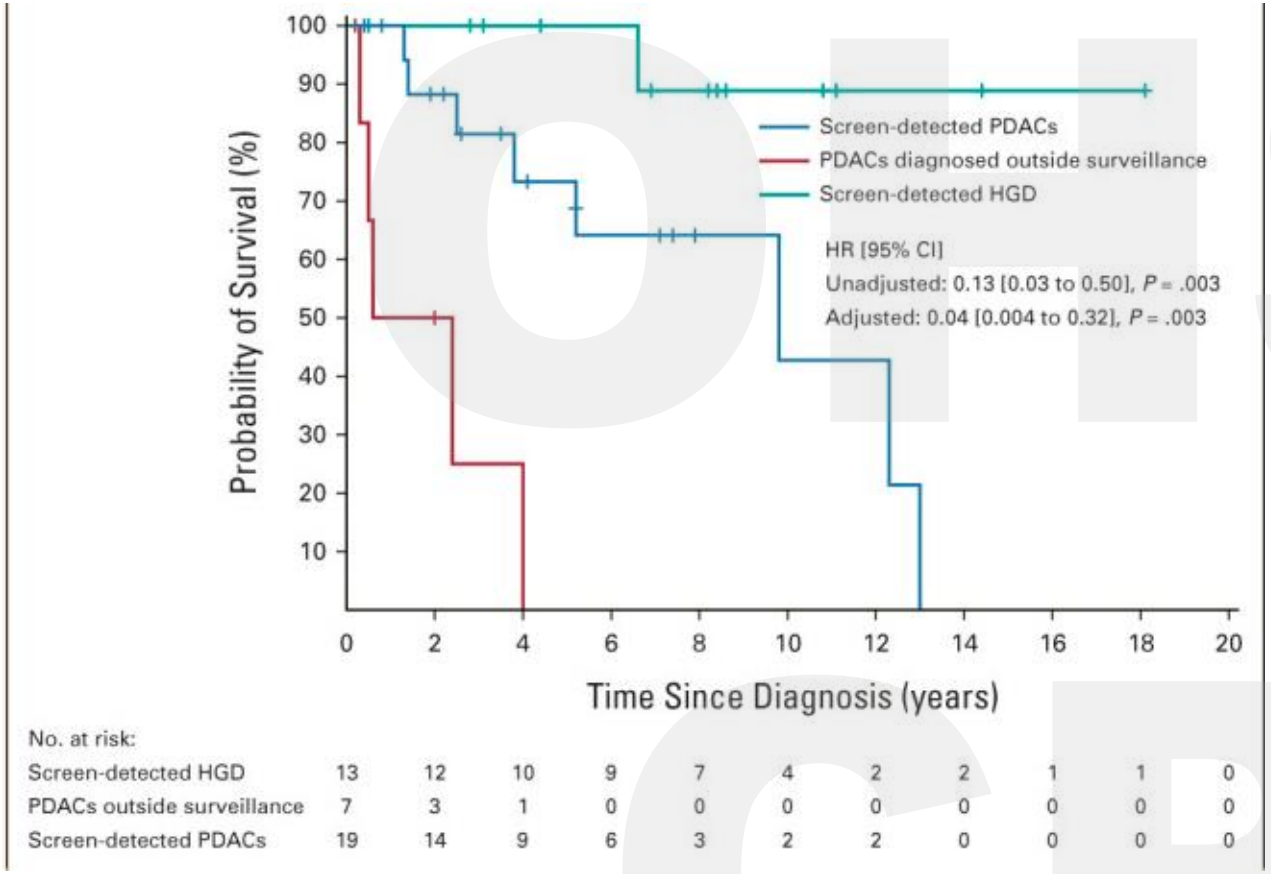
Case Study Continued

Multiphase CT confirmed hypoenhancing pancreatic tail mass, no vascular involvement, no duct dilation

OR for lap radical antegrade modular pancreatosplenectomy (RAMPS)

OR path confirmed acinar cell carcinoma

Recovered well and has started FOLFIRINOX



J Clin Oncol. 2022 Oct 1; 40(28): 3257–3266.
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Evidence to Support Screening

CAPS5 Study-included carriers with germline pathogenic variants and those who met familial-risk criteria (1,731 patients)

26 PDAC cases diagnosed, 19 within surveillance, 57.9% of whom had stage I and 5.2% had stage IV disease

By contrast, six of the seven PDACs (85.7%) detected outside surveillance were stage IV

The 5-year overall survival among screen-detected PDACs was 73.3%

Conclusion

The goal of early detection is to diagnose patients when disease is treatable

Screening programs also advance research and improve guidelines

OHSU is also working to enhance community engagement

When in doubt refer!!!

Thank you

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