Veterans with Pancreatic Cysts, On The Road to Cancer? A 22-year retrospective Analysis

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Introduction

Cyst Size	IAP (Fukuoka) 2012	IAP (Fukuoka) 2017	ACG 2018	ACR 2018	European 2018	AGA 2015
< 1 cm	CT/MRI in 2-3 yr	CT/MRI in 6 mo then every 2 yr	MRI q 2 yr (lengthen after 4)	MRI/CT q1 year for cysts <1.5 cm and a6 mo for cysts 1.5-2.5 cm x4 and then lengthen interval; stop after stability over 10 yr	Surveillance q 6 mo x 2 with MRI and/or EUS, CA19-9; if stable lifelong surveillance is recommended with annual MRI/EUS CA19-9	MRI in 1 yr, then every 2 for 5 yr Stop if stable
1-2 cm	CT/MRI annually x 2 yr then lengthen interval if stable	CT/MRI in 6 m x 1 yr A Annually x 2 yr, then lengthen interval if stable	MRI q 1 yrs FOR 3 yr Then q 2 yr FOR 4 yr	See above	See above	
2-3 cm	EUS in 3-6 mo, then lengthen interval, alternate MRI with EUS as appropriate	EUS in 3-6 mo, then lengthen interval alternate MRI with EUS as appropriate	EUS/MRI q 6mo for 3 yr then yearly for 4 yr	For cysts >2.5 cm q6 mo MRI/CT and then stop if stable for over 10 yr for patients >80 of age, q2 year imaging		
>3 cm	Alternate MRI/EUS every 3-6 mo	Alternate MRI/EUS every 3-6 mo	EUS/MRI q 6mo for 3 yr then yearly for 4 yrs			

Table 1: Pancreatic Cyst surveillance without high risk or worrisome features upon diagnosis

- The rise of CT and MRI imaging has increased detection rates of pancreatic cysts up to 15%.
- Currently there is a lack of agreement on how best to survey incidental pancreatic cysts. (Table 1)

Objective

To define **the frequency of pancreatic cancer, cause of death, frequency of surveillance and surgery** among veterans with incidental pancreatic cyst.

Methods

Retrospective chart review of 1905 veterans who underwent EUS for incidental pancreatic cyst from 2000 – 2022 at a single VA health care system.

Included diagnosis of incidental pancreatic cyst. Excluded cyst existing in the presence of symptoms or prevalent pancreatic cancer (at the time of first EUS).

Statistical Analysis:

We conducted Chi-square analysis, ANOVA test and log rank test to compare survival curves amongst different causes of death.

Results

Of the 1905 patients who underwent EUS, 261 were found with pancreatic cysts on EUS. Of these, 36 (13.7%) were diagnosed as cancer:

- **9 pancreatic Incidental AdCa**, 11 developed NET, 16 prevalent AdCa and 225 patients remained cancer free
- The mean ages 68 (P=NS)

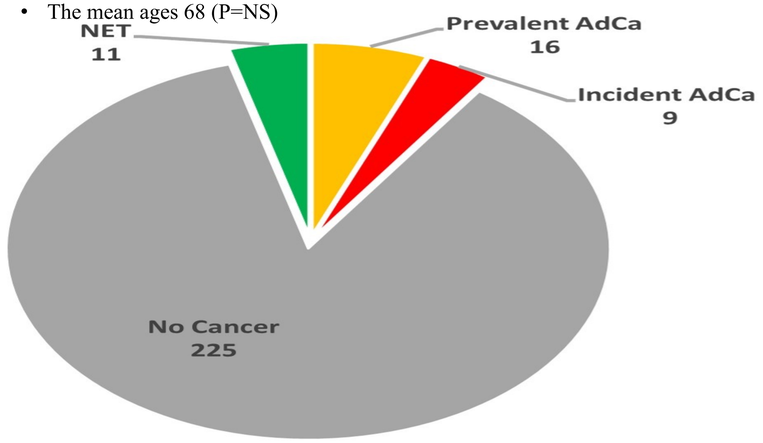

Figure 1: Distribution of Benign and Malignant Lesions Found During Cyst Diagnosis and Surveillance.

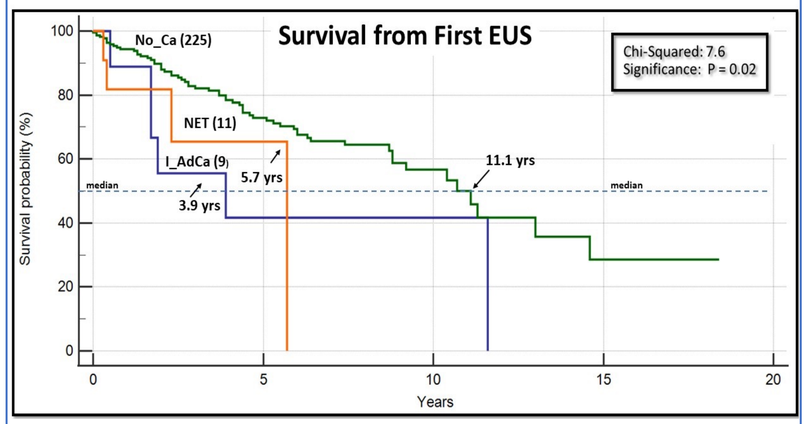

Figure 2: Kaplan-Meier Survival Curve from the first EUS

Overall, half of patients in the study had died by 11 years

Median survival was 3.9 years for I AdCa and 11 years for No Ca group

- The significant difference is due almost entirely to the long survival of the no cancer group
- 75% Incidental AdCa were detected within the first 2 years

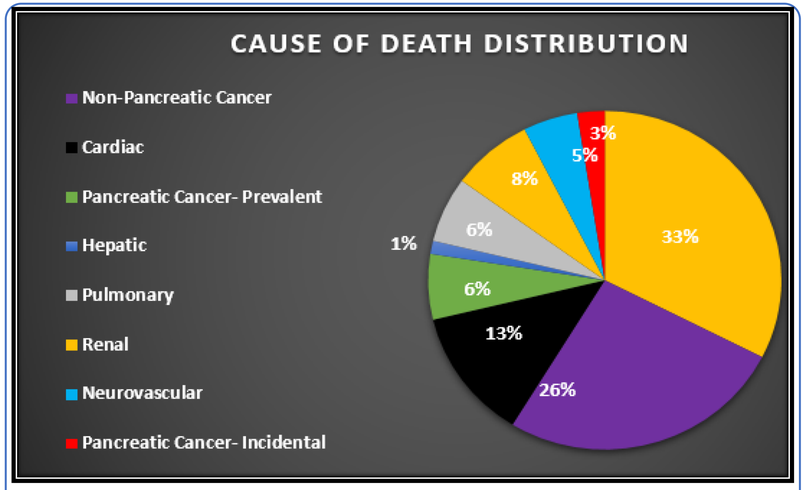

Figure 3: Cause of Death Distribution

Discussion

1. Despite our study population having higher mean age and higher comorbidity index, **overtime only 9 patients (3%) developed incidental pancreatic cancer.** Which is good news for the patients.
2. Majority of these patients have benign lesions and our study suggests those that do become cancerous, **75% of the time occur within the first two years**
3. Similar to previous data, **cancer patients died earlier than non-cancer patients, but only 3% died secondary to incidental pancreatic cancer despite being a generally older population with a higher comorbidity index.**
4. As shown in our diagram, majority of the patients died secondary to other cancer or cardiac causes.

References

1. Hruban, R. H., & Fukushima, N. (2008). Cystic lesions of the pancreas. *Diagnostic histopathology (Oxford, England)*, *14*(6), 260–265. https://doi.org/10.1016/j.mpdhp.2008.04.002
2. Machado, N. O., Al Qadhi, H., & Al Wahibi, K. (2015). Intraductal Papillary Mucinous Neoplasm of Pancreas. *North American journal of medical sciences*, *7*(5), 160–175. https://doi.org/10.4103/1947-2714.157477
3. Tanaka, M., Fernández-Del Castillo, C., Kamisawa, T., Jang, J. Y., Levy, P., Ohtsuka, T., Salvia, R., Shimizu, Y., Tada, M., & Wolfgang, C. L. (2017). Revisions of international consensus Fukuoka guidelines for the management of IPMN of the pancreas. *Pancreatology : official journal of the International Association of Pancreatology (IAP) ... [et al.]*, *17*(5), 738–753. https://doi.org/10.1016/j.pan.2017.07.007