Improving Referrals for Universal Genetic Testing for Pancreatic Cancers at a Regional Cancer Center

Gloria J Morris, MD, PhD [1,2]; Jason A Shandler, MS, CGC [1,2]; Mary McCauley, MS, GC [1,2]; Derek Kurtz, MHA, CPHQ [1,3]
Mashaal Dhir, MD [1,4].*
[1]Upstate Cancer Center, [2]Genetic Counseling Program, [3] Director of Quality Program and Patient Safety, and [4]Hepato-Biliary and Pancreatic Surgery Program, SUNY Upstate Medical University, Syracuse, NY

Abstract:

National consensus guidelines recommend hereditary testing for all patients with pancreatic cancer, regardless of family history, as identification of actionable mutations can not only guide specific therapy, but also provide impetus to test and screen their family members.
We have quantified the numbers of patients seen at our cancer center with pancreatic cancer via electronic medical record queried for diagnosis of all stages of disease. Of these, we determined those referred for hereditary testing. Between 2021 to 2022, we saw that 19.41% patients, increasing to 38.46% were referred for germline testing. Of these, pathogenic variants were identified in 15%, with a majority in *BRCA2*. In 2023, this number of referrals is steadily increasing after active communication with multidisciplinary oncologists in our center.

Introduction:

Pancreatic cancer (PancCa) is rare, however, the 3rd-4th deadliest cancer in women and men, respectively per the latest ACS statistics.
The ACS and other national cohorts list PancCa as a stand-alone criterion for offering hereditary testing regardless of stage of the disease. Several national groups have introduced initiatives to improve universal germline testing in larger centers, including:

- **implementing electronic notifications** in medical record systems to prompt automatic referral
- **genetic counselor-driven testing stations** within oncology clinics

Determination of actionable targetable mutations may guide specific therapy, as well as specific surveillance for family members. In addition, cascade testing is available for all family members of those with positive gene mutations.

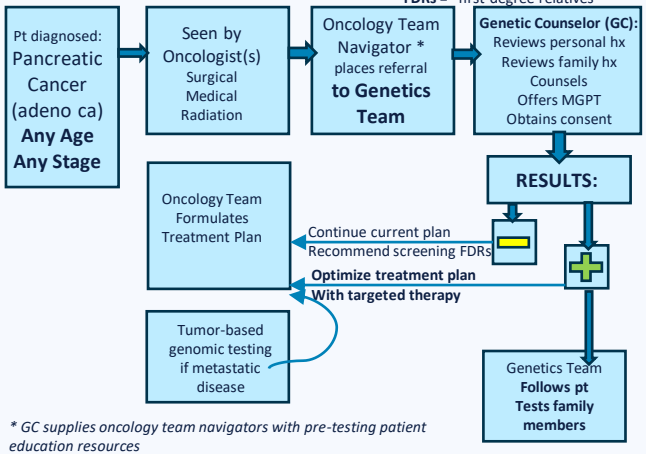
Methods:

We quantified the numbers of patients seen at Upstate Cancer Center as diagnosed with pancreatic cancer, all stages, via surgical/medical oncology provider-driven referral for hereditary germline testing. In an IRB Exempt study, the numbers of patients seen were tabulated via Epic medical record for diagnosis of pancreatic cancer patients and providers of the multidisciplinary clinics at UCC Downtown Syracuse and satellite locations. In addition, these were confirmed by querying the de-identified RedCap database maintained by the UCC Genetics Program for the types of hereditary mutations detected.

Year:	No. referrals	Positives:	Genes:	Implications for increased risks:	Recommendations:
2021	20 (19.41%)	5 (25%)	BRCA2 (3)	Hereditary Breast/Ovarian Cancer	Platinum-based chemo + PARP inhibitor
2022	40 (38.46%)	6 (15%)	ATM (4)	Hereditary Breast/Pancreatic Cancer	Clinical trials for PARP inhibitor
2023	42 (23.70%)	6 (15.4%)	STK11 (1)	Peutz-Jehgers syndrome	Breast and other cancer screening
2024	Goal 100%		others:		
			CFTR (2)	CF carrier	Family testing
			CHEK2 (1)	Hereditary Breast/Colon Cancer	Breast and other cancer screening
			MITF (2)	Melanoma	Dermatologic screening
			MUTYH (2)	Colon polyposis	Colonoscopy
			NF1 (1)	Neurofibromatosis, GIST	Specialist management
			NTHL1 (1)	Colon polyposis	Colonoscopy

Process:

Abbrev: **MGPT** = "multigene panel testing"
FDRs = "first-degree relatives"



** GC supplies oncology team navigators with pre-testing patient education resources*

Benefits of Detecting Hereditary Mutations:

For patients:

- Determination of specific targeted therapy

For Family Members:

- Early detection
- Prevention

Conclusion:

We seek to continue to improve upon direct referral for universal testing for all pancreatic cancer patients seen at our center in effort to personalize treatment and identify high-risk families who could benefit from early surveillance. We propose a point-of-care referral by all oncology providers as best practice in order to improve on the referral process for hereditary testing, and to model initiatives by several groups across the nation for this goal.

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