Editorial Commentary

Screening for pancreatic cancer in individuals with genetic susceptibility

Robert Grützmann, Maximilian Brunner

Department of General and Visceral Surgery, Friedrich-Alexander-University (FAU) Erlangen-Nuremberg, Erlangen, Germany

Correspondence to: Maximilian Brunner, MD. Department of General and Visceral Surgery, Friedrich-Alexander-University (FAU) Erlangen-Nuremberg, Krankenhausstraße 12, 91054 Erlangen, Germany. Email: Maximilian.Brunner@uk-erlangen.de.

Comment on: Sawhney MS, Calderwood AH, Thosani NC, *et al.* ASGE guideline on screening for pancreatic cancer in individuals with genetic susceptibility: summary and recommendations. Gastrointest Endosc 2022;95:817-26.

Keywords: Pancreatic cancer; screening; genetic susceptibility; guideline; BRCA

Submitted Apr 05, 2023. Accepted for publication Apr 26, 2023. Published online May 08, 2023.
doi: 10.21037/hbsn-23-176
View this article at: https://dx.doi.org/10.21037/hbsn-23-176

Pancreatic cancer is a highly lethal disease with a five-year survival rate of only about 10% (1). Early detection is crucial for improving patient outcomes, but pancreatic cancer is often diagnosed at an advanced stage when treatment options are limited (2). Individuals with a genetic susceptibility to pancreatic cancer, such as those with a strong family history or a genetic mutation associated with the disease, are at higher risk of developing pancreatic cancer than the general population. Screening these high-risk individuals could potentially lead to earlier detection and improved outcomes.

In 2020, the American Society for Gastrointestinal Endoscopy (ASGE) published guidelines on screening for pancreatic cancer in individuals with genetic susceptibility (*Table 1*) (3). The guidelines recommend screening for individuals with a known genetic susceptibility to pancreatic cancer, including familial pancreatic cancer (FPC), Peutz-Jeghers syndrome, familial atypical multiple mole melanoma (FAMMM), Lynch syndrome, and BRCA1, BRCA2, ataxia telangiectasia mutated (ATM), and PALB2 pathogenic variants. Strong family history is defined as having at least two first-degree relatives or three or more second-degree relatives on the same side of the family diagnosed with pancreatic cancer.

The recommended screening tests include magnetic resonance imaging (MRI) with magnetic resonance cholangiopancreatography (MRCP) or endoscopic ultrasound (EUS) with or without fine-needle aspiration (FNA). The preferred screening test should be selected individually, taking into account the patient's risk factors and other considerations. EUS may be preferred as the initial screening test, especially for patients at very high risk for pancreatic cancer, such as those with Peutz-Jeghers syndrome and FAMMM. EUS may also be preferred when it can be combined with screening upper endoscopy or colonoscopy, as in the case of Lynch and Peutz-Jeghers syndrome. Additionally, EUS may be recommended when there is a contraindication to MRI, such as in patients with claustrophobia, contrast allergy, implanted metal, or renal failure. On the other hand, MRI may be preferred in patients at increased risk of adverse events from anesthesia or invasive procedures and those who place a high value on avoiding invasive testing. However, alternating use of EUS and MRI could even combine the diagnostic advantages of both methods.

Screening is recommended annually, with the starting age ranging from 35 to 50 years depending on the underlying gene constellation and the age of affected relatives. Screening should begin at least 10 years earlier than the youngest relative with pancreatic cancer.

The ASGE guidelines are based on a systematic review of the literature and expert consensus, providing clear recommendations for screening and managing high-risk individuals with genetic susceptibility to pancreatic cancer. They help standardize care and improve patient outcomes and represent the most up-to-date and comprehensive

© HepatoBiliary Surgery and Nutrition. All rights reserved.

Table 1 Overview of the key recommendations of the ASGE guideline (3)

Recommendations	Level of evidence
In individuals at increased risk of pancreatic cancer because of genetic susceptibility, we suggest screening for pancreatic cancer compared with no screening	Conditional, low quality
In patients at increased risk of pancreatic cancer because of genetic susceptibility, we suggest screening with EUS, EUS alternating with MRI, or MRI based on patient preference and available expertise	Conditional, very low quality
In individuals with BRCA2 pathogenic variant, we suggest screening for pancreatic cancer compared with no screening	Conditional, very low quality
In individuals with BRCA1 pathogenic variant, we suggest screening for pancreatic cancer compared with no screening	Conditional, very low quality
In individuals at increased risk of pancreatic cancer because of genetic susceptibility, we suggest that annual screening be performed	Conditional, very low quality
In individuals at increased risk for pancreatic cancer because of genetic susceptibility, we suggest that the starting age for screening should vary based on the underlining genetic condition	Conditional, very low quality

ASGE, American Society for Gastrointestinal Endoscopy; EUS, endoscopic ultrasound; MRI, magnetic resonance imaging.

recommendations. Compared to previous guidelines, they expand the group of individuals for whom screening is considered useful and provide clear recommendations for the frequency and type of screening, ensuring that high-risk individuals receive appropriate and timely screening.

However, the guidelines have some limitations that need to be considered. One major limitation is the low level of evidence supporting the recommendations, which rely on expert consensus rather than high-quality evidence. The lack of available data with high-quality evidence may reduce the value of the guidelines and could lead to variations in practice. Although screening high-risk individuals could lead to earlier detection and improved outcomes, the benefits of screening in high-risk populations are not well-established. More research is needed to determine screening's effectiveness in reducing pancreatic cancer mortality and to identify effective screening strategies for high-risk individuals. Additionally, the guidelines do not consider the cost-effectiveness of screening, which could be a significant barrier to implementing the recommendations, particularly in resource-limited settings. More research is necessary to evaluate screening's cost-effectiveness and identify strategies to reduce its cost.

In conclusion, the ASGE guidelines on screening for pancreatic cancer in individuals with genetic susceptibility provide valuable recommendations for identifying and managing high-risk individuals. However, due to limited available data, they are based only on a systematic literature review with limited evidence and expert consensus. Further research is necessary to confirm the effectiveness of screening in reducing pancreatic cancer mortality and to evaluate the cost-effectiveness of the recommendations. Future research should also address the role of other risk factors, noninvasive biomarkers, validating circulating tumor cells and DNA for early-stage pancreatic cancer diagnosis, and managing patients with normal screening examinations. The guidelines should be regularly updated as new evidence emerges to ensure the recommendations are based on the best available evidence.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, *Hepatobiliary Surgery and Nutrition*. The article did not undergo external peer review.

Conflicts of Interest: Both authors have completed the ICMJE uniform disclosure form (available at https://hbsn.amegroups.com/article/view/10.21037/hbsn-23-176/coif). The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

© HepatoBiliary Surgery and Nutrition. All rights reserved.

Open Access Statement: This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: https://creativecommons.org/licenses/by-nc-nd/4.0/.

Cite this article as: Grützmann R, Brunner M. Screening for pancreatic cancer in individuals with genetic susceptibility. HepatoBiliary Surg Nutr 2023;12(3):421-423. doi: 10.21037/hbsn-23-176

References

1. Siegel RL, Miller KD, Fuchs HE, et al. Cancer statistics, 2022. CA Cancer J Clin 2022;72:7-33.
2. Brunner M, Wu Z, Krautz C, et al. Current Clinical Strategies of Pancreatic Cancer Treatment and Open Molecular Questions. Int J Mol Sci 2019;20:4543.
3. Sawhney MS, Calderwood AH, Thosani NC, et al. ASGE guideline on screening for pancreatic cancer in individuals with genetic susceptibility: summary and recommendations. Gastrointest Endosc 2022;95:817-26.

© HepatoBiliary Surgery and Nutrition. All rights reserved.