ASCO special article abstract

Potentially Curable Pancreatic Adenocarcinoma: ASCO Clinical Practice Guideline Update

Alok A. Khorana, MD[1]; Shannon E. McKernin[2]; Jordan Berlin, MD[3]; Theodore S. Hong, MD[4]; Anirban Maitra, MBBS[5]; Cassadie Moravek[6]; Matthew Mumber, MD[7]; Richard Schulick, MD, MBA[8]; Herbert J. Zeh, MD[9]; and Matthew H.G. Katz, MD[5]

PURPOSE The purpose of this guideline update is to incorporate recently reported practice-changing evidence into ASCO's recommendations on potentially curable pancreatic adenocarcinoma.

METHODS ASCO convened an Expert Panel to evaluate data from PRODIGE 24/CCTG PA.6, a phase III, multicenter, randomized clinical trial of postoperative leucovorin calcium, fluorouracil, irinotecan hydrochloride, and oxaliplatin (FOLFIRINOX) versus gemcitabine alone, presented at the 2018 ASCO Annual Meeting. In addition, PubMed was searched for additional papers that may influence the existing recommendations.

RECOMMENDATIONS The Expert Panel only updated Recommendation 4.1 as a result of the practice-changing data. Recommendation 4.1 states that all patients with resected pancreatic adenocarcinoma who did not receive preoperative therapy should be offered 6 months of adjuvant chemotherapy in the absence of medical or surgical contraindications. The modified combination regimen of 5-fluorouracil, oxaliplatin, and irinotecan (mFOLFIRINOX; oxaliplatin 85 mg/m^2, leucovorin 400 mg/m^2, irinotecan 150 mg/m^2 D1, and 5-fluorouracil 2.4 g/m^2 over 46 hours every 14 days for 12 cycles) is now preferred in the absence of concerns for toxicity or tolerance; alternatively, doublet therapy with gemcitabine and capecitabine or monotherapy with gemcitabine alone or fluorouracil plus folinic acid alone can be offered.

Additional information can be found at www.asco.org/gastrointestinal-cancer-guidelines.

J Clin Oncol 37:2082-2088. © 2019 by American Society of Clinical Oncology

INTRODUCTION

ASCO first published evidence-based clinical practice guidelines on potentially curable pancreatic cancer in May 2016, with an update in 2017.[1,2] The goal of this update is to provide oncologists and other clinicians with current evidence. The complete list of the original and updated recommendations is available in Table 1.

METHODS

ASCO uses a signals approach to facilitate guideline updating. This approach is intended to identify new, potentially practice-changing data—signals—that might translate into revised practice recommendations.[3] The approach relies on routine literature searching and the expertise of ASCO guideline panel members to identify signals. This systematic review-based guideline product was developed by a multidisciplinary Expert Panel, which included a patient representative and an ASCO guidelines staff member with health research methodology expertise (Appendix Table A1, online only). The ASCO Guidelines Methodology Manual (available at www.asco.org/guideline-methodology) provides additional information about the guideline update process. This is the most recent information as of the publication date.

Guideline Disclaimer

The Clinical Practice Guidelines and other guidance published herein are provided by the American Society of Clinical Oncology, Inc. ("ASCO") to assist providers in clinical decision making. The information therein should not be relied upon as being complete or accurate, nor should it be considered as inclusive of all proper treatments or methods of care or as a statement of the standard of care. With the rapid development of scientific knowledge, new evidence may emerge between the time information is developed and when it is published or read. The information is not continually updated and may not reflect the most recent evidence. The information addresses only the topics specifically identified therein and is not applicable to other interventions, diseases, or stages of diseases. This information does not mandate any particular course of medical care. Further, the information is not intended to substitute for the independent professional judgment of the treating provider, as the information does

ASSOCIATED CONTENT

Appendix

Data Supplement

Author affiliations and support information (if applicable) appear at the end of this article.

Accepted on April 9, 2019 and published at jco.org on June 10, 2019: DOI https://doi.org/10.1200/JCO.19.00946

A.A.K. and M.H.G.K. were Expert Panel co-chairs.

Clinical Practice Guidelines Committee approval: April 4, 2019

THE BOTTOM LINE

Potentially Curable Pancreatic Adenocarcinoma: ASCO Clinical Practice Guideline Update

Guideline Question

What is the appropriate adjuvant regimen for patients with pancreatic adenocarcinoma who have undergone an R0 or R1 resection of their primary tumor?

Target Population

People diagnosed with potentially curable pancreatic cancer.

Target Audience

Medical oncologists, radiation oncologists, surgeons, gastroenterologists, and other caregivers.

Methods

An Expert Panel was convened to develop update clinical practice guideline recommendations based on recently published practice changing data.

Focused Update Recommendation

Recommendation 4.1.

All patients with resected pancreatic adenocarcinoma who did not receive preoperative therapy should be offered 6 months of adjuvant chemotherapy in the absence of medical or surgical contraindications. The modified combination regimen of 5-FU, oxaliplatin, and irinotecan (mFOLFIRINOX) as used in the latter part of the PRODIGE 24/CCTG PA.6 trial (oxaliplatin 85 mg/m^2, leucovorin 400 mg/m^2, irinotecan 150 mg/m^2 D1, and 5-FU 2.4 g/m^2 over 46 hours every 14 days for 12 cycles) is preferred in the absence of concerns for toxicity or tolerance; alternatively, doublet therapy with gemcitabine and capecitabine or monotherapy with gemcitabine alone or fluorouracil plus folinic acid alone can be offered. (Type: Evidence based; benefits outweigh harms; Evidence quality: high; Strength of recommendation: strong).
Refer to Table 1 for the full list of recommendations.

Additional Resources:

More information, including a supplement with evidence tables, slide sets, and clinical tools and resources, is available at www.asco.org/gastrointestinal-cancer-guidelines. The Methodology Manual (available at www.asco.org/guideline-methodology) provides additional information about the methods used to develop this guideline. Patient information is available at www.cancer.net

ASCO believes that cancer clinical trials are vital to inform medical decisions and improve cancer care, and that all patients should have the opportunity to participate.

not account for individual variation among patients. Recommendations reflect high, moderate or low confidence that the recommendation reflects the net effect of a given course of action. The use of words like "must," "must not," "should," and "should not" indicate that a course of action is recommended or not recommended for either most or many patients, but there is latitude for the treating physician to select other courses of action in individual cases. In all cases, the selected course of action should be considered by the treating provider in the context of treating the individual patient. Use of the information is voluntary. ASCO provides this information on an "as is" basis, and makes no warranty, express or implied, regarding the information. ASCO specifically disclaims any warranties of merchantability or fitness for a particular use or purpose. ASCO assumes no responsibility for any injury or damage to persons or property arising out of or related to any use of this information or for any errors or omissions.

Guideline and Conflicts of Interest

The Expert Panel was assembled in accordance with ASCO's Conflict of Interest Policy Implementation for Clinical Practice Guidelines ("Policy," found at http://www.asco.org/rwc). All members of the Expert Panel completed ASCO's disclosure form, which requires disclosure of financial and other interests, including relationships with commercial entities that are reasonably likely to experience direct regulatory or commercial impact as a result of promulgation of the guideline. Categories for disclosure include employment; leadership; stock or other ownership; honoraria, consulting or advisory role; speaker's bureau; research funding; patents, royalties, other intellectual property; expert testimony; travel, accommodations, expenses; and other relationships. In accordance with the Policy, the majority of the members of the Expert Panel did not disclose any relationships constituting a conflict under the Policy.

TABLE 1. Potentially Curable Pancreatic Adenocarcinoma: ASCO Clinical Practice Guideline Recommendations

Clinical Question	Recommendation
Clinical Question 1. After a histopathologic confirmation of pancreatic adenocarcinoma diagnosis, what initial assessment is recommended before initiating any therapy for potentially curable pancreatic cancer?	*Recommendation 1.1.* A multiphase computed tomography (CT) scan of the abdomen and pelvis using a pancreatic protocol or magnetic resonance imaging (MRI) should be performed for all patients with pancreatic cancer to assess the anatomic relationships of the primary tumor and to assess for the presence of intra-abdominal metastases. Endoscopic ultrasonography and/or diagnostic laparoscopy may be used as supplemental studies, and to facilitate acquisition of a biopsy specimen. A chest x-ray may be performed to stage the thorax. Other staging studies should be performed only as dictated by symptom burden. A serum level of CA 19-9 and baseline standard laboratory studies should be assayed. (Type: Evidence based, benefits outweigh harms; Evidence quality: high; Strength of recommendation: strong).
	Recommendation 1.2. The baseline performance status, symptom burden, and comorbidity profile of a person diagnosed with potentially curable pancreatic cancer should be carefully evaluated. (Type: Evidence based, benefits outweigh harms; Evidence quality: high; Strength of recommendation: strong).
	Recommendation 1.3. The goals of care (including a discussion of advance directives), patient preferences, and support systems should be discussed with every person diagnosed with potentially curable pancreatic cancer and his or her caregivers. (Type: Evidence based, benefits outweigh harms; Evidence quality: intermediate; Strength of recommendation: strong).
	Recommendation 1.4. Multidisciplinary collaboration to formulate treatment and care plans and disease management for patients with potentially curable pancreatic cancer should be the standard of care. (Type: Evidence based, benefits outweigh harms; Evidence quality: intermediate; Strength of recommendation: strong).
	Recommendation 1.5. Every person with pancreatic cancer should be offered information about clinical trials, including therapeutic trials in all lines of treatment, as well as palliative care, biorepository/biomarker, and observational studies. (Type: Informal consensus, benefits outweigh harms; Evidence quality: intermediate; Strength of recommendation: strong).
Clinical Question 2. Which patients with potentially curable pancreatic cancer should be offered a potentially curative strategy with primary tumor resection?	*Recommendation 2.1.* Primary surgical resection of the primary tumor and regional lymph nodes is recommended for patients with potentially curable pancreatic cancer who meet all of the following criteria: no clinical evidence for metastatic disease, a performance status and comorbidity profile appropriate for a major abdominal operation, no radiographic interface between primary tumor and mesenteric vasculature on high-definition cross-sectional imaging, and a CA 19-9 level (in absence of jaundice) suggestive of potentially curable disease. (Type: Evidence based, benefits outweigh harms; Evidence quality: intermediate; Strength of recommendation: strong).
Clinical Question 3. Which patients with potentially curable pancreatic cancer should be offered a potentially curative strategy with preoperative therapy, followed by a planned primary tumor resection?	*Recommendation 3.1.* Preoperative therapy is recommended for patients with pancreatic cancer who meet any of the following criteria: radiographic findings suspicious but not diagnostic for extrapancreatic disease, a performance status or comorbidity profile not currently appropriate (but potentially reversible) for a major abdominal operation, a radiographic interface between primary tumor and mesenteric vasculature on cross-sectional imaging that does not meet appropriate criteria for primary resection, or a CA 19-9 level (in absence of jaundice) suggestive of disseminated disease. (Type: Evidence based, benefits outweigh harms; Evidence quality: low; Strength of recommendation: strong).
	Recommendations 3.2. Preoperative therapy should be offered as an alternative treatment strategy for any patient who meets all criteria in Recommendation 2.1. (Type: Evidence based, benefits outweigh harms; Evidence quality: low; Strength of recommendation: strong).
	Recommendation 3.3. If preoperative therapy is administered, a complete restaging evaluation (see Clinical Question 1) is recommended after completion of treatment and before final surgical planning. (Type: Informal consensus benefits outweigh harms; Evidence quality: intermediate; Strength of recommendation: strong).

(continued on following page)

TABLE 1. Potentially Curable Pancreatic Adenocarcinoma: ASCO Clinical Practice Guideline Recommendations (continued)

Clinical Question	Recommendation
Clinical Question 4. What is the appropriate adjuvant regimen for patients with pancreatic cancer who have undergone an R0 or R1 resection of their primary tumor?	*Updated Recommendation 4.1.* All patients with resected pancreatic adenocarcinoma who did not receive preoperative therapy should be offered 6 months of adjuvant chemotherapy in the absence of medical or surgical contraindications. The modified combination regimen of 5-fluorouracil, oxaliplatin and irinotecan (mFOLFIRINOX) as used in the latter part of the PRODIGE 24/CCTG PA.6 trial (oxaliplatin 85 mg/m^2, leucovorin 400 mg/m^2, irinotecan 150 mg/m^2 D1, and 5-fluorouracil 2.4 g/m^2 over 46 hours every 14 days for 12 cycles) is preferred in the absence of concerns for toxicity or tolerance; alternatively, doublet therapy with gemcitabine and capecitabine or monotherapy with gemcitabine alone or fluorouracil plus folinic acid alone can be offered. (Type: Evidence based, benefits outweigh harms; Evidence quality: high; Strength of recommendation: strong).
	Recommendation 4.2. Adjuvant chemoradiation may be offered to patients who did not receive preoperative therapy and present postresection with microscopically positive margins (R1) and/or node-positive disease after completion of 4 to 6 months of systemic adjuvant chemotherapy as outlined in recommendation 4.1. There is clinical equipoise regarding the benefit of adjuvant radiation therapy in this setting pending results of an ongoing international RCT. (Type: Informal consensus, benefits outweigh harms; Evidence quality: intermediate; Strength of recommendation: moderate)
	Recommendation 4.3. For patients with pancreatic cancer who received preoperative therapy, there are no RCT data to guide the administration of postoperative therapy. The Panel recommends that a total of 6 months of adjuvant therapy (including preoperative regimen) be offered based on extrapolation from adjuvant therapy trials. (Type: Informal consensus, benefits outweigh harms; Evidence quality: low; Strength of recommendation: strong)
Clinical Question 5. When should palliative care services be initiated for people with pancreatic cancer that is potentially curable by surgery?	*Recommendation 5.1.* People with potentially curable pancreatic cancer should have a full assessment of symptom burden, psychological status, and social supports as early as possible, preferably at the first visit. In some cases, this may indicate a need for a formal palliative care consult and services. (Type: Informal consensus, benefits outweigh harms; Evidence quality: intermediate; Strength of recommendation: strong)
	Recommendation 5.2. People who have undergone pancreatectomy for potentially curable pancreatic cancer should receive ongoing supportive care for symptom burden that may result from the surgery and (preoperative and/or adjuvant) chemotherapy. (Type: Informal consensus, benefits outweigh harms; Evidence quality: intermediate; Strength of recommendation: strong)
Clinical Question 6. What is the recommended frequency of follow-up care/surveillance for people with potentially curable pancreatic cancer after the administration of potentially curative multimodality therapy that includes resection?	*Recommendation 6.1.* In the absence of RCT evidence, the Panel recommends that people who have completed treatment of potentially curable pancreatic cancer and have no evidence of disease be monitored for recovery of treatment-related toxicities and recurrence. Visits may be offered at 3- to 6-month intervals; the role of serial cross-sectional imaging, the extent to which surveillance intervals should be prolonged over time, and the duration of recommended surveillance are all undefined. (Type: Informal consensus, benefits outweigh harms; Evidence quality: low; Strength of recommendation: moderate).

RECOMMENDATION

Clinical Question

This update focuses solely on new evidence pertaining to Clinical Question 4 of the guideline: What is the appropriate adjuvant regimen for patients with pancreatic adenocarcinoma who have undergone an R0 or R1 resection of their primary tumor?

Recommendation 4.1. All patients with resected pancreatic adenocarcinoma who did not receive preoperative therapy should be offered 6 months of adjuvant chemotherapy in the absence of medical or surgical contraindications. The modified combination regimen of 5-fluorouracil (FU), oxaliplatin, and irinotecan (mFOLFIRINOX) as used in the latter part of the Partenariat de Recherche en Oncologie Digestive (PRODIGE) 24/ Canadian Cancer Trials Group Pancreatic Adenocarcinoma 6 (CCTG PA.6) trial (oxaliplatin 85 mg/m^2, leucovorin 400 mg/m^2, irinotecan 150 mg/m^2 D1, and 5-FU 2.4 g/m^2 over 46 hours every 14 days for 12 cycles) is preferred in the absence of concerns for toxicity or tolerance; alternatively, doublet therapy with gemcitabine and capecitabine or monotherapy with gemcitabine alone or fluorouracil plus folinic acid alone can be offered. (Type: Evidence based, benefits outweigh harms; Evidence quality: high; Strength of recommendation: strong).

Literature review and analysis. The final results from PRODIGE 24/CCTG PA.6, a phase III, multicenter, randomized clinical trial of postoperative leucovorin calcium, fluorouracil, irinotecan hydrochloride, and oxaliplatin (FOLFIRINOX) versus gemcitabine alone, were recently presented.[4] Adult patients up to 79 years old with histologically proven pancreatic ductal adenocarcinomas, a World Health Organization performance status of 1 or greater, who had undergone complete macroscopic (R0 or R1) resection within 3 to 12 weeks before random assignment, and who had adequate hematologic and renal function and no symptomatic heart failure or coronary heart disease were eligible for inclusion. Patients with incomplete (R2) resection, a serum CA 19-9 level of more than 180 U/mL within 21 days before random assignment or prior use of chemotherapy or radiation therapy were ineligible. A modified dose of FOLFIRINOX (mFOLFIRINOX) was used (oxaliplatin 85 mg/m^2, leucovorin 400 mg/m^2, irinotecan initially at 180 mg/m^2 and partway through the study reduced to 150 mg/m^2 D1, and 5-FU 2.4 g/m^2 over 46 hours) every 14 days for 12 cycles for patients randomly assigned to the mFOLFIRINOX arm and the primary end point was disease-free survival. As noted, the dose of irinotecan was reduced to 150 mg/m^2 after the enrollment of 162 patients, in accordance with a protocol-specified safety analysis. In the mFOLFIRINOX arm, 66.4% of patients and 79.0% of patients in the gemcitabine arm received the planned doses of treatment (P = .002). For 493 enrolled patients, median disease-free survival was 12.8 (95% CI, 11.7 to 15.2) months in patients in the gemcitabine arm and 21.6 (95% CI, 17.7 to 27.6) months in the mFOLFIRINOX arm (hazard ratio, 0.58; 95% CI, 0.46 to 0.73). Median overall survival was 35.0 (95% CI, 28.7 to 43.9) and 54.4 (95% CI, 41.8 to not reached) months, respectively, again favoring the FOLFIRINOX arm (hazard ratio, 0.64; 95% CI, 0.48 to 0.86). Grade 3 to 4 adverse events were reported in 52.9% of patients in the gemcitabine arm and 75.9% of patients in the mFOLFIRINOX arm. On the basis of these data, the combination regimen arm of mFOLFIRINOX is a new and preferred option for adjuvant therapy for patients after resection.

Clinical interpretation. Compelling randomized trial evidence establishes the benefit of adjuvant systemic therapy over surgery alone in this setting. Therefore, the panel recommends that all patients with resected pancreatic cancer who did not receive preoperative therapy be offered 6 months of chemotherapy postoperatively, assuming complete recovery. The combination regimen of mFOLFIRINOX has shown significant improvement in survival relative to gemcitabine, as demonstrated in a randomized trial with appropriate data and safety monitoring and is therefore preferred. Clinicians should recognize the restrictive inclusion criteria for enrollment into this trial, including the upper limits on patients' age (79 years) and serum CA 19-9 level (180 U/mL). Clinicians should also be aware of the potential toxicity associated with this regimen, although modified doses were used partway through the PRODIGE 24/CCTG PA.6 randomized trial and only the modified regimen is therefore recommended. Doublet therapy with gemcitabine and capecitabine or monotherapy with gemcitabine alone or FU plus folinic acid alone may be offered if concerns for toxicity or tolerance exist or based on patient preferences. For patients who receive monotherapy, gemcitabine is favored, given evidence of less toxicity.

LITERATURE SEARCH AND UPDATE DEVELOPMENT

Guideline Update Process

The randomized clinical trial PRODIGE 24/CCTG PA.6 was presented at the 2018 ASCO Annual Meeting in Chicago, IL, which prompted this update, because the results of the trial were deemed significant and practice changing. The abstract data were confirmed by publication of the full manuscript in December 2018.[4] In addition to this signal, PubMed was searched for randomized controlled trials, systematic reviews, meta-analyses, and clinical practice guidelines for the period from June 1, 2015, to January 8, 2019. The disease and intervention search terms were those that were used for the previous guideline update. The search yielded five additional references that were deemed to not change any of the existing recommendations.[5-9]

Additional information, including the results of the updated literature search, search string, results, and QUOROM diagram, is available in the Supplement at www.asco.org/gastrointestinal-cancer-guidelines. A discussion of the ASCO guideline update process is available in the ASCO Guidelines Methodology Manual (available at www.asco.org/guideline-methodology).

The Expert Panel met via teleconference and over e-mail to consider the evidence. The guideline was circulated in draft form to the Expert Panel. All ASCO guidelines are ultimately reviewed and approved by the Expert Panel and the ASCO Clinical Practice Guidelines Committee before publication. All funding for the administration of the project was provided by ASCO.

ADDITIONAL RESOURCES

Additional Information, including a supplement, evidence tables, and clinical tools and resources can be found at www.asco.org/gastrointestinal-cancer-guidelines. Patient information is available there and at www.cancer.net.

RELATED ASCO GUIDELINES

- Integration of Palliative Care into Standard Oncology Practice (http://ascopubs.org/doi/10.1200/JCO.2016.70.1474)[10]
- Patient-Clinician Communication (http://ascopubs.org/doi/10.1200/JCO.2017.75.2311)[11]
- Locally Advanced Pancreatic Cancer (http://ascopubs.org/doi/10.1200/JCO.2016.67.5561)[12]
- Metastatic Pancreatic Cancer (http://ascopubs.org/doi/10.1200/JCO.2018.78.9636)[13]
- Evaluating Susceptibility to Pancreatic Cancer PCO (http://ascopubs.org/doi/10.1200/JCO.18.01489)[14]
- Practical Assessment and Management of Vulnerabilities in Older Patients Receiving Chemotherapy (http://ascopubs.org/doi/10.1200/JCO.2018.78.8687)[15]

AFFILIATIONS

[1]Cleveland Clinic, Cleveland, OH
[2]American Society of Clinical Oncology, Alexandria, VA
[3]Vanderbilt University, Nashville, TN
[4]Massachusetts General Hospital, Boston, MA
[5]The University of Texas MD Anderson Cancer Center, Houston, TX
[6]Pancreatic Cancer Action Network, Los Angeles, CA
[7]Harbin Clinic, Rome, GA
[8]University of Colorado at Denver, Denver, CO
[9]UT Southwestern, Dallas, TX

CORRESPONDING AUTHOR

American Society of Clinical Oncology, 2318 Mill Rd, Suite 800, Alexandria, VA 22314; e-mail: guidelines@asco.org.

Editor's note: This American Society of Clinical Oncology (ASCO) Clinical Practice Guideline provides recommendations, with comprehensive review and analyses of the relevant literature for each recommendation. Additional information, including a supplement with additional evidence tables, slide sets, clinical tools and resources, and links to patient information at www.cancer.net, is available at www.asco.org/gastrointestinal-cancer-guidelines.

AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST AND DATA AVAILABILITY STATEMENT

Disclosures provided by the authors and data availability statement (if applicable) are available with this article at DOI https://doi.org/10.1200/JCO.19.00946.

AUTHOR CONTRIBUTIONS

Manuscript writing: All authors
Final approval of manuscript: All authors
Accountable for all aspects of the work: All authors

ACKNOWLEDGMENT

The Expert Panel thanks Alexander Spira, MD; Minaxi Jhawer, MD; and the Clinical Practice Guidelines Committee for their thoughtful reviews and insightful comments on this guideline.

REFERENCES

1. Khorana AA, Mangu PB, Berlin J, et al: Potentially curable pancreatic cancer: American Society of Clinical Oncology clinical practice guideline update. J Clin Oncol 35:2324-2328, 2017
2. Khorana AA, Mangu PB, Berlin J, et al: Potentially curable pancreatic cancer: American Society of Clinical Oncology clinical practice guideline. J Clin Oncol 34: 2541-2556, 2016
3. Shojania KG, Sampson M, Ansari MT, et al: How quickly do systematic reviews go out of date? A survival analysis. Ann Intern Med 147:224-233, 2007
4. Conroy T, Hammel P, Hebbar M, et al: FOLFIRINOX or gemcitabine as adjuvant therapy for pancreatic cancer. N Engl J Med 379:2395-2406, 2018
5. D'Angelo F, Antolino L, Farcomeni A, et al: Neoadjuvant treatment in pancreatic cancer: Evidence-based medicine? A systematic review and meta-analysis. Med Oncol 34:85, 2017
6. D'Angelo FA, Antolino L, La Rocca M, et al: Adjuvant and neoadjuvant therapies in resectable pancreatic cancer: A systematic review of randomized controlled trials. Med Oncol 33:28, 2016
7. Sinn M, Bahra M, Liersch T, et al: CONKO-005: Adjuvant chemotherapy with gemcitabine plus erlotinib versus gemcitabine alone in patients after R0 resection of pancreatic cancer: A multicenter randomized phase III Trial. J Clin Oncol 35:3330-3337, 2017
8. Uesaka K, Boku N, Fukutomi A, et al: Adjuvant chemotherapy of S-1 versus gemcitabine for resected pancreatic cancer: A phase 3, open-label, randomised, non-inferiority trial (JASPAC 01). Lancet 388:248-257, 2016

9. Versteijne E, Vogel JA, Besselink MG, et al: Meta-analysis comparing upfront surgery with neoadjuvant treatment in patients with resectable or borderline resectable pancreatic cancer. Br J Surg 105:946-958, 2018
10. Ferrell BR, Temel JS, Temin S, et al: Integration of palliative care into standard oncology care: American Society of Clinical Oncology clinical practice guideline update. J Clin Oncol 35:96-112, 2017
11. Gilligan T, Coyle N, Frankel RM, et al: Patient-clinician communication: American Society of Clinical Oncology consensus guideline. J Clin Oncol 35:3618-3632, 2017
12. Balaban EP, Mangu PB, Khorana AA, et al: Locally advanced, unresectable pancreatic cancer: American Society of Clinical Oncology clinical practice guideline. J Clin Oncol 34:2654-2668, 2016
13. Sohal DPS, Kennedy EB, Khorana A, et al: Metastatic pancreatic cancer: ASCO clinical practice guideline update. J Clin Oncol 36:2545-2556, 2018
14. Stoffel EM, McKernin SE, Brand R, et al: Evaluating susceptibility to pancreatic cancer: ASCO provisional clinical opinion. J Clin Oncol 37:153-164, 2019
15. Mohile SG, Dale W, Somerfield MR, et al: Practical assessment and management of vulnerabilities in older patients receiving chemotherapy: ASCO guideline for geriatric oncology. J Clin Oncol 36:2326-2347, 2018

AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

Potentially Curable Pancreatic Adenocarcinoma: ASCO Clinical Practice Guideline Update

The following represents disclosure information provided by authors of this manuscript. All relationships are considered compensated. Relationships are self-held unless noted. I = Immediate Family Member, Inst = My Institution. Relationships may not relate to the subject matter of this manuscript. For more information about ASCO's conflict of interest policy, please refer to www.asco.org/rwc or ascopubs.org/jco/site/ifc.

Alok A. Khorana
Honoraria: Janssen, Halozyme, Pfizer, Bayer, AngioDynamics, Pharmacyte Biotech
Consulting or Advisory Role: Janssen, Halozyme, Bayer, Pfizer, Pharmacyte Biotech, Pharmacyclics, Seattle Genetics
Research Funding: Merck (Inst), Array BioPharma (Inst), Bristol-Myers Squibb (Inst), Leap Oncology (Inst)
Travel, Accommodations, Expenses: Janssen, Pfizer, Bayer, Janssen

Jordan Berlin
Honoraria: Nestlé Health Science
Consulting or Advisory Role: Celgene, Roche, EMD Serono, Cornerstone Pharmaceuticals, Five Prime Therapeutics, Exelixis, Gritstone Oncology, ERYTECH Pharma, BeiGene, Karyopharm Therapeutics, AstraZeneca, Arno Therapeutics, AbbVie, Eisai, Bayer Health, LSK BioPharma, Seattle Genetics
Research Funding: Roche (Inst), Immunomedics (Inst), Gilead Sciences (Inst), Taiho Pharmaceutical (Inst), Five Prime Therapeutics (Inst), Loxo (Inst), Bayer (Inst), Incyte (Inst), Pharmacyclics (Inst), Karyopharm Therapeutics (Inst), EMD Serono (Inst), BeiGene (Inst), Symphogen (Inst), Boston Biomedical (Inst), Macrogenics (Inst)
Travel, Accommodations, Expenses: Nestlé Health Science, EMD Serono, AbbVie, Bayer, Seattle Genetics
Other Relationship: AstraZeneca

Theodore S. Hong
Consulting or Advisory Role: Clinical Genomics, EMD Serono, Merck
Research Funding: Novartis (Inst), Taiho Pharmaceutical (Inst), AstraZeneca (Inst), Clinical Genomics (Inst), Intrao, Tesaro

Anirban Maitra
Honoraria: Celgene
Patents, Royalties, Other Intellectual Property: Royalties from Hangzhou Guangkeande (Cosmos) Biotechnology for blood-based biomarkers of early pancreatic cancer. I do not own stocks in the company nor do I have any research or grant funding from them.

Richard Schulick
Consulting or Advisory Role: Noile-Immune Biotech
Patents, Royalties, Other Intellectual Property: Aduro Biotech, GlaxoSmithKline

Herbert J. Zeh
Research Funding: Aduro Biotech (Inst)

Matthew H.G. Katz
Consulting or Advisory Role: Alcresta Therapeutics, AbbVie

No other potential conflicts of interest were reported.

APPENDIX

TABLE A1. Potentially Curable Pancreatic Adenocarcinoma: ASCO Clinical Practice Guideline Update Expert Panel Membership

Name	Affiliation/Institution	Role/Area of Expertise
Alok A. Khorana, MD, co-chair	Cleveland Clinic, Cleveland, OH	Medical oncology
Matthew H.G. Katz, MD, co-chair	University of Texas MD Anderson Cancer Center, Houston, TX	Surgical oncology
Richard Schulick, MD, MBA	University of Colorado at Denver, Denver, CO	Surgeon
Matthew Mumber, MD	Harbin Clinic, Rome, GA	Practice Guidelines Implementation Network
Herbert J. Zeh, MD	UT Southwestern, Dallas, TX	Surgical oncology
Jordan Berlin, MD	Vanderbilt University, Nashville, TN	Medical oncology
Theodore S. Hong, MD	Massachusetts General Hospital, Boston, MA	Radiation oncology
Cassadie Moravek	Pancreatic Cancer Action Network, Los Angeles, CA	Patient representative
Anirban Maitra, MBBS	University of Texas MD Anderson Cancer Center, Houston, TX	Pathologist
Shannon E. McKernin	American Society of Clinical Oncology, Alexandria, VA	ASCO Practice Guidelines staff (Health Research Methods)