

Evidence Summary Pancreatic Cancer ONC 13.2-13.5

These sections apply only to adenocarcinoma of the exocrine pancreas and the ampulla of Vater. Neuroendocrine tumors are addressed in the neuroendocrine guidelines.

Suspected Disease/Initial Staging

Epigastric pain and weight loss are addressed in the eviCore guidelines for epigastric pain and dyspepsia. For patients with symptoms suspicious for pancreatic cancer with abnormal labs and physical findings or abnormal or non-diagnostic ultrasound or ERCP, CT pancreatic protocol (abdomen without and with contrast) or MRI abdomen without and with contrast are supported. CT pancreatic protocol has a sensitivity and specificity of 90 and 87 percent respectively (Toft 2017, Kato 2020). Sensitivity and specificity of MRI and 89 and 90 % respectively (Toft 2017, Kato 2020). CT has the advantage of being less costly, more accessible, and faster, but exposes to more radiation. MRI may be more sensitive for visualization of pancreatic ducts and has less radiation exposure, but can be less accessible, more costly, takes longer, and can pose difficulties with claustrophobia and has more contraindications (Kato 2020). Given their similar sensitivity and specificity, the eviCore guidelines allow flexibility for providers and patients to weigh risks and benefits for each patient for suspected disease.

For biopsy proven pancreatic adenocarcinoma, evaluation for metastatic disease with contrasted CTs of the chest, abdomen and pelvis are supported, given that approximately 80% of patients have metastatic or locally advanced disease at presentation (NCI 2024). Resectability has a dramatic impact on prognosis, and MRI abdomen with and without contrast is supported in addition to CT if CT insufficient to determine resectability, for preoperative planning, or to evaluate indeterminate liver lesions (Tempero 2024). Given the high incidence of metastatic disease at presentation, if high-risk features are noted but no metastatic disease is visible on conventional imaging, a PET/CT is supported to assess for occult extra-pancreatic metastatic disease, in alignment with the NCCN. This is not a substitute for a diagnostic-quality contrasted CT or MRI, which is superior for detecting pancreatic disease (Tempero 2024, Toft 2017). PET/MRI is a level 2B recommendation in the NCCN, a weak expert consensus without sufficient data, and as such eviCore guidelines to not routinely support this modality (Tempero 2024, Rijtkers 2014, Wang 2013, Sohol 2016).

Restaging

For patients with unresectable or metastatic disease on chemotherapy, imaging of the chest, abdomen and pelvis with contrast (or without and with contrast for the abdomen and pelvis) are supported every 2 cycles of treatment, given the high rate of progression and metastases, to allow for prompt consideration of changes in treatment. CT of any involved or symptomatic area is also supported. The same imaging is supported after neoadjuvant chemoradiation to assess resectability and rule out metastatic disease. Resection is the mainstay of curative therapy in pancreatic cancer, but only 20% of patients achieve this status. Patients with unresectable or metastatic disease are unlikely to benefit from surgery, thus pre-operative evaluation for metastasis is essential to minimize unnecessary surgical risk (NCI 2024, Tempero 2024). As noted in the initial staging section, both CT and MRI have advantages and disadvantages. In alignment with the NCCN and American Society of Clinical Oncology (ASCO), eviCore guidelines support CT as first line restaging imaging, but allow for MRI with and without contrast of the abdomen as a “problem-solving tool” for inconclusive findings on CT scan or unexplained liver enzymes.

MRI is more specific for liver disease and offers better soft tissue differentiation for inconclusive findings (Tempero 2024, Sohol 2016). The same imaging guidance applies to suspected recurrence of disease. Restaging CTs as above are also supported as a post-operative baseline, to ensure the absence of residual disease and make decisions regarding adjuvant treatment, and to ensure accurate comparison for surveillance imaging. The role of PET-CT for pancreatic cancer restaging has not yet been established and is not routinely supported by eviCore guidelines (Tempero 2024, Rijtkers 2014, Wang 2013, Sohol 2016).

Surveillance

Data on the role of surveillance in pancreatic cancer are limited, due to the poor prognosis and small numbers of patients with long-term follow up. The NCCN recommendations for surveillance are based on consensus rather than data, and SEER-Medicare data shows no significant survival benefit for patients who received regular surveillance scans/no improved outcome with earlier detection of recurrence (Tempero 2024, Witkowski 2012). EviCore guidelines, therefore generally support the less conservative timeframe recommended by NCCN, which is CT scans of the chest, abdomen and pelvis every 6 months for 2 years after resection, then annually (Tempero 2024). The role of ongoing imaging in patients with metastatic disease on maintenance or observation is also unclear. There is no clear data on length of time for maintenance therapy in those with metastatic disease, and treatment 'holidays' are often interjected in therapy. Outside of situations where there is a clear impact on management decisions, ASCO states that imaging should be supplanted by clinical evaluation (Sohol 2016). However, the NCCN offers several second and third-line treatment options. EviCore guidelines provide some flexibility for patient centricity and provider preference in this setting, allowing for CT chest, abdomen and pelvis every 3 months for up to 5 years after completion of definitive treatment (Tempero 2024).

References

1. Tempero MA, Hawkins WG, Poultides G. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Pancreatic Adenocarcinoma Version 2.2024-April 30, 2024. All rights reserved. Accessed [May 14,2024]. To view the most recent and complete version of the guideline, go online to NCCN.org
2. Khayat S, Choudhary K, Claude Nshimiyimana J, Gurav J, Hneini A, Nazir A, Chaito H, Wojtara M, Uwishema O. Pancreatic cancer: from early detection to personalized treatment approaches. *Ann Med Surg (Lond)*. 2024 Apr 4;86(5):2866-2872. doi: 10.1097/MS9.0000000000002011. PMID: 38694319; PMCID: PMC11060269.
3. Kato S, Honda K. Use of Biomarkers and Imaging for Early Detection of Pancreatic Cancer. *Cancers (Basel)*. 2020 Jul 19;12(7):1965. doi: 10.3390/cancers12071965. PMID: 32707720; PMCID: PMC7409286.
4. Toft J, Hadden WJ, Laurence JM, Lam V, Yuen L, Janssen A, Pleass H. Imaging modalities in the diagnosis of pancreatic adenocarcinoma: A systematic review and meta-analysis of sensitivity, specificity and diagnostic accuracy. *Eur J Radiol*. 2017 Jul;92:17-23. doi: 10.1016/j.ejrad.2017.04.009. Epub 2017 Apr 24. PMID: 28624015.

5. PDQ® Adult Treatment Editorial Board. PDQ. Bethesda, MD: National Cancer Institute. Pancreatic Cancer Treatment (PDQ®)–Health Professional Version. Available at [Pancreatic Cancer Treatment \(PDQ®\) - NCI](#). Accessed May 17 2024.
6. Rijkers AP, Valkema R, Duivenvoorden HJ, van Eijck CH. Usefulness of F-18-fluorodeoxyglucose positron emission tomography to confirm suspected pancreatic cancer: a meta-analysis. *Eur J Surg Oncol*. 2014 Jul;40(7):794-804. doi: 10.1016/j.ejso.2014.03.016. Epub 2014 Apr 3. PMID: 24755095.
7. Wang Z, Chen JQ, Liu JL, Qin XG, Huang Y. FDG-PET in diagnosis, staging and prognosis of pancreatic carcinoma: a meta-analysis. *World J Gastroenterol*. 2013 Aug 7;19(29):4808-17. doi: 10.3748/wjg.v19.i29.4808. PMID: 23922481; PMCID: PMC3732856.
8. Witkowski ER, Smith JK, Ragulin-Coyne E, Ng SC, Shah SA, Tseng JF. Is it worth looking? Abdominal imaging after pancreatic cancer resection: a national study. *J Gastrointest Surg*. 2012 Jan;16(1):121-8. doi: 10.1007/s11605-011-1699-z. Epub 2011 Oct 5. PMID: 21972054.
9. Sohal DP, Mangu PB, Khorana AA, Shah MA, Philip PA, O'Reilly EM, Uronis HE, Ramanathan RK, Crane CH, Engebretson A, Ruggiero JT, Copur MS, Lau M, Urba S, Laheru D. Metastatic Pancreatic Cancer: American Society of Clinical Oncology Clinical Practice Guideline. *J Clin Oncol*. 2016 Aug 10;34(23):2784-96. doi: 10.1200/JCO.2016.67.1412. Epub 2016 May 31. PMID: 27247222; PMCID: PMC5019760.