

National Imaging Associates, Inc.*	
Clinical guidelines PANCREATIC CANCER	Original Date: June 2013
Radiation Oncology	Last Revised Date: January 2022
Guideline Number: NIA_CG_134	Implementation Date: January 2023

INDICATIONS FOR RADIATION THERAPY

2D and 3D conformal radiation therapy techniques are considered medically necessary for treatment of pancreatic cancer.

Neoadjuvant (Pre-Operative) or Resectable or Borderline Resectable without evidence of metastatic¹

- No standard treatment regimen currently exists for this subset of patients. If neoadjuvant radiation therapy is delivered, a dose of 45-54Gy in 1.8-2.5Gy fractions or 36Gy in 2.4 fractions are viable options.

Adjuvant (Post-Operative) Resectable Without Evidence of Metastatic Disease¹

- For resected cases (45-46Gy in 1.8-2Gy fractions) to the clinical target volume, followed by boost (5-9Gy). Up to 31 fractions.

Unresectable/Locally Advanced Without Evidence of Metastatic Disease¹

- Radiation delivered in 45-54Gy (1.8-2.5Gy fractions or 36Gy in 2.4 fractions). Up to 30 fractions.

Palliative¹

- Radiation delivered in 25-36Gy in 2.4-5.0Gy fractions is usual for patients with metastatic disease who require palliation for obstruction or pain. Up to 15 fractions.

Local Recurrence after Resection without Evidence of Systemic Metastatic Disease

- Adjuvant chemotherapy or chemoradiation if no previous radiation given. Up to 30 fractions.¹

TREATMENT OPTIONS REQUIRING PHYSICIAN REVIEW

Intensity Modulated Radiation Therapy (IMRT)

IMRT is not indicated as a standard treatment option and should not be used routinely for the delivery of radiation therapy for pancreatic cancer. IMRT is strictly defined by the utilization of inverse planning

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modulation techniques. IMRT may be appropriate for limited circumstances in which radiation therapy is indicated and 3D conformal radiation therapy (3D-CRT) techniques cannot adequately deliver the radiation prescription without exceeding normal tissue radiation tolerance, the delivery is anticipated to contribute to potential late toxicity or tumor volume dose heterogeneity is such that unacceptable hot or cold spots are created.

Clinical rationale and documentation for performing IMRT rather than 2D or 3D-CRT treatment planning and delivery will need to:

- Demonstrate how 3D-CRT isodose planning cannot produce a satisfactory treatment plan (as stated above) via the use of patient-specific dose volume histograms and isodose plans.
- Provide tissue constraints for both the target and affected critical structures.

Per RTOG 1102,^{2,3} for neoadjuvant, definitive, palliative, and recurrent disease, not more than 30% of the total volume of kidneys can receive $\geq 18\text{Gy}$. If only one kidney is functional, not more than 10% of the volume can receive $\geq 18\text{Gy}$. Maximum dose to stomach, duodenum, and jejunum is 55Gy. Mean dose of liver cannot exceed 30Gy. Maximum dose to D0.03cc of spinal cord must be $\leq 45\text{Gy}$.

Per RTOG 0848,⁴ for adjuvant therapy, mean dose to bilateral kidneys must be $< 18\text{Gy}$. If only one kidney is functional, not more than 15% of that kidney can receive $\geq 18\text{Gy}$, and not more than 30% can receive $\geq 14\text{Gy}$. Maximum dose to stomach, duodenum, and jejunum is $\leq 54\text{Gy}$, $< 10\%$ of each organ volume can receive between 50 and 53.99Gy, $< 15\%$ of the volume of each organ can receive between 45 and 49.99Gy. Mean dose of liver must be $\leq 25\text{Gy}$. Maximum dose to D0.03cc of spinal cord must be $\leq 45\text{Gy}$.

Stereotactic Body Radiation Therapy (SBRT)¹

Stereotactic Body Radiation Therapy (SBRT) is appropriate to treat locally advanced or recurrent disease without evidence of distant metastasis **or** to treat a previously irradiated field.

Proton Beam Radiation Therapy

Proton beam is not an approved treatment option for pancreatic cancer. Proton beam has not been proven a superior treatment to conventional radiation therapy.

Intra Operative Radiation Therapy (IORT)

The role of intraoperative radiation therapy for pancreatic cancer is controversial but may be reasonable for patients undergoing resection that may result in closer involved margins. IORT may be considered on a case-by-case basis.

BACKGROUND

Pancreatic cancer typically occurs later in life. Risk factors include smoking, alcohol use, obesity, diabetes, and certain chemical exposures. Pancreatitis has also been shown to have an increased risk

of developing pancreatic cancer. Surgical resection is potentially the only curative approach, but most patients present with more advanced stage disease. Overall, the actuarial five-year survival rate is approximately 20%.

The goal of these guidelines is to delineate appropriate indications of the employment of radiation therapy in the treatment of pancreatic cancer and to define suitable methods of delivery of radiation therapy for these indications.

POLICY HISTORY

Date	Summary
January 2022	Added: Dose constraints for neoadjuvant, definitive, palliative and recurrent disease based on RTOG 1102 and dose constraints for adjuvant therapy based on RTOG 0848.
February 2021	Deleted: Stereotactic Body Radiation Therapy (SBRT) is considered medically necessary for the treatment of pancreatic cancer. If requested a physician review is required. Added: Stereotactic Body Radiation Therapy (SBRT) is appropriate to treat locally advanced or recurrent disease without evidence of distant metastasis or to treat a previously irradiated field
February 2020	<ul style="list-style-type: none"> • Stereotactic Radiation Therapy: Deleted: Stereotactic Body Radiation Therapy (SBRT) is not currently an approved treatment option for pancreatic cancer. Added: Stereotactic Body Radiation Therapy (SBRT) is considered medically necessary for the treatment Pancreatic Cancer • Added and Updated References
February 2019	<ul style="list-style-type: none"> • Added and updated references

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ADDITIONAL RESOURCES

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Reviewed / Approved by NIA Clinical Guideline Committee

GENERAL INFORMATION

It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.

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