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Reirradiation with Stereotactic Body Radiation Therapy for Locally Recurrent Pancreatic Adenocarcinoma

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Abstract
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Abhinav Reddy [1] , Colin Hill [2] , Shuchi Sehgal [3] , Jin He [4] , Lei Zheng [5] , Joseph Herman [6] , Jeffrey Meyer [2] , Amol Narang [2]

1. Radiation Oncology, Johns Hopkins University, Baltimore, USA 2. Radiation Oncology, Johns Hopkins University School of Medicine, Baltimore, USA 3. School of Medicine, Philadelphia College of Osteopathic Medicine, Philadelphia, USA 4. Department of Surgery, Johns Hopkins University, Baltimore, USA 5. Johns Hopkins School of Medicine, The Johns Hopkins University School of Medicine, Baltimore, USA 6. Radiation Oncology, Northwell Health Cancer Institute, New Hyde, USA

Corresponding author: Abhinav Reddy, areddy19@jhmi.edu

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Abstract

Objective: The purpose of this study is to report on outcomes of a cohort of patients who were treated with reirradiation with stereotactic body radiation therapy (SBRT) for locally recurrent pancreatic adenocarcinoma.

Methods: Patients treated with SBRT reirradiation for locally recurrent pancreatic adenocarcinoma from December 2009 to April 2020 were included in the study. Descriptive statistics were used to record patient demographic, tumor, and treatment characteristics. Kaplan-Meier analysis was used to evaluate overall survival (OS), local-progression free survival (LPFS), distant metastasis free survival (DMFS), and progression-free survival (PFS).

Results: A total of 30 patients were included in the study. The median follow-up time was 35.4 months (range, 16.5-62.2 months). The majority of patients received five-fraction SBRT (29/30, 97%). The median OS after local recurrence treatment was 18.3 months (range, 3.0-42.6 months), with 6-month, 1-year, and 2-year OS rates of 89.7%, 72.4%, and 30.9%. The median LPFS after local recurrence treatment was 15.1 months (range, 2.3-33.6 months), with 6-month, 1-year, and 2-year LPFS rates of 96.3%, 64.8%, and 25.6%. Peri-SBRT chemotherapy improved LPFS (median, 17.5 vs 10.5 months; p=0.035) and OS (median, 18.3 vs 6.7 months; p = 0.033). Tumors < 3 cm in greatest dimension demonstrated better local control (median LPFS, 19.2 vs 10.2 months; p=0.089). There was 1 case (3%) of acute grade III pain and 2 cases (7%) of late grade III gastrointestinal toxicity.

Conclusion: Reirradiation with five-fraction SBRT is safe, but local control remains sub-optimal. Patients with smaller tumors experienced improved outcomes, as did patients whose treatment plan included the administration of peri-SBRT chemotherapy.