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Abstract

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Patient Outcomes Following MRI-Guided Stereotactic Body Radiation Therapy with Daily Adaptive Planning for Pancreatic Adenocarcinoma

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Abstract

Objectives:

The goal of this study is to analyze patient outcomes following stereotactic body radiation therapy (SBRT) for non-metastatic pancreatic adenocarcinoma who received treatment on an MRI-guided linear accelerator with adaptive planning.

Methods:

Consecutive patients with non-metastatic pancreatic cancer (Stage 3 or less) treated to 50Gy/5 fractions from 2022-2023 were included. Progression free survival (PFS) and overall survival (OS) were calculated from the time of diagnosis and from the end of treatment (EOT) of SBRT. Common Terminology Criteria for Adverse Events was used to account for toxicity. Variations in adaptive treatment volumes and dosimetry were compared to original treatment plans.

Results:

We included 7 pts with an average age of 62.71 years (39-76). All had 3+ cycles of gem/abrax (1/7), mFOLFIRINOX (5/7) or both (1/7). Median PFS and OS from EOT was 1.12 (0.32-1.94) and 1.54 (0.41-2.58) years. Median OS from diagnosis was 2.32 years (1.01-3.18). 1 and 2 year OS from diagnosis was 100% and 57.1%, and from EOT 57.1% and 40%. There were no Grade 3+ acute or late toxicities. At a median follow up of 1.51 years (0.36-2.52) from EOT, 4/7 pts (57.1%) are still living. On average, adapted GTV and PTV varied by 10%-15% and the adapted duodenum hot spot varied by 6.1%.

Conclusion(s):

While this is a small patient sample, we were able to achieve excellent results when compared to previously reported patient survival outcomes of individuals treated with conventional radiation therapy. Patients also reported little to no treatment related toxicity both while under treatment and at follow up. Adaptive planning led to small, but clinically beneficial variations in treatment volumes and dosimetry when compared to original treatment plans.