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An Original Research Article for Evaluation of Changes in Tumor Size After Neoadjuvant Chemotherapy in Borderline Resectable Pancreatic Ductal Adenocarcinoma

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ABSTRACT

Objective: Pancreatic cancers may pose a formidable challenge to treating physicians with their relatively poorer prognoses despite multimodality management. Evaluation of resectability is critical for pancreatic cancers since the outcome is typically better for patients undergoing surgical resection as part of management. However, some tumors are classified as borderline resectable. Particularly for this group, utilization of neoadjuvant systemic therapy may have a role in multimodality management. Neoadjuvant chemotherapy may be considered as a critical component of management for borderline resectable tumors. In the current study, we focused on volumetric changes in borderline resectable pancreatic cancers treated by neoadjuvant chemotherapy. We have documented changes in tumor volume after neoadjuvant chemotherapy in patients with borderline resectable pancreatic ductal adenocarcinoma.

Materials and Methods: Patients with borderline resectable pancreatic ductal adenocarcinoma having available imaging data as part of initial workup have been studied. All included patients received neoadjuvant chemotherapy for borderline resectable pancreatic ductal adenocarcinoma. We have performed a comparative analysis for tumor volumes at diagnostic imaging data of the patients and at reevaluation imaging data after neoadjuvant chemotherapy.

Results: We revealed that there was a mean decrease of 24% in tumor size after neoadjuvant chemotherapy in the selected group of patients with borderline resectable pancreatic ductal adenocarcinoma.

Conclusion: Our results may have implications from the perspective of oncological management for patients with borderline resectable pancreatic ductal adenocarcinoma despite the need for further studies to shed light on these critical issues.

Keywords: Pancreatic Ductal Adenocarcinoma; Borderline Resectable; Neoadjuvant Chemotherapy

Introduction

Pancreatic cancers may pose a formidable challenge to treating physicians with their relatively poorer prognoses despite multimodality management [1-7]. They are not so uncommon tumors, and comprise a considirable proportion of gastrointestinal cancers. Evaluation of resectability is critical for pancreatic cancers since the outcome is typically better for patients undergoing surgical resection as part of management [8-10]. However, some tumors are classified as borderline resectable. Particularly for this group, utilization of neoadjuvant systemic therapy may have a role in multimodality management [11-14]. Besides surgery, systemic therapy and Radiation Therapy (RT) may be used for treatment of pancreatic cancers. Patients may be exposed to significant morbidity due to tumor and administered therapies. Unfortunately, a significant proportion of patients with pancreatic cancer succumb to their disease within a

relatively short timeframe [15-17]. Surgical resection may be feasible and may prolong time to disease progression and mortality for selected patients. Neoadjuvant chemotherapy may be considered as a critical component of management for borderline resectable tumors. In the current study, we focused on volumetric changes in borderline resectable pancreatic cancers treated by neoadjuvant chemotherapy. We have documented changes in tumor volume after neoadjuvant chemotherapy in patients with borderline resectable pancreatic ductal adenocarcinoma.

Materials and Methods

Department of Radiation Oncology at Gulhane Medical Faculty, University of Health Sciences serves as a tertiary cancer center treating a huge patient population from several places from Turkey and abroad for several decades. At our referral institution, several benign and malignant tumors are irradiated. Main goal of this study has been to assess changes in tumor volume following neoadjuvant chemotherapy for borderline resectable pancreatic ductal adenocarcinoma. To address this critical issue, patients with borderline resectable pancreatic ductal adenocarcinoma having available imaging data as part of initial workup have been studied. All included patients received neoadjuvant chemotherapy for borderline resectable pancreatic ductal adenocarcinoma. We have performed a comparative analysis for tumor volumes at diagnostic imaging data of the patients and at reevaluation imaging data after neoadjuvant chemotherapy.

Results

This original research article has aimed at evaluating changes in tumor volume following neoadjuvant chemotherapy for borderline resectable pancreatic ductal adenocarcinoma. Initially, all patients were individually assessed by a multidisciplinary team of experts from surgical oncology, medical oncology and radiation oncology disciplines. Patients with borderline resectable pancreatic ductal adenocarcinoma having available imaging data as part of initial workup have been assessed. Selected patients received neoadjuvant chemotherapy and afterwards were reevaluated by subsequent imaging. We have performed a comparative analysis for tumor volumes at diagnostic imaging data of the patients and at reevaluation imaging data after neoadjuvant chemotherapy. Changes in tumor volume following neoadjuvant chemotherapy were documented for comparative analysis. We revealed that there was a mean decrease of 24% in tumor size after neoadjuvant chemotherapy in the selected group of patients with borderline resectable pancreatic ductal adenocarcinoma.

Discussion

Pancreatic cancers may pose a formidable challenge to treating physicians with their relatively poorer prognoses despite multimodality management [1-7]. They are not so uncommon tumors, and constitute a considirable proportion of gastrointestinal cancers. Assessment of resectability is critical component of decision making process for optimal management since the outcome is typically better for patients undergoing surgical resection as part of treatment [8-10]. Nevertheless, some tumors are classified as borderline resectable. Especially for this group, use of neoadjuvant chemotherapy may have a role in multimodality management [11-14]. Besides surgery, systemic therapy and RT may be utilized for treatment of pancreatic cancers. Unfortunately, patients may be exposed to significant morbidity due to tumor and administered therapies. Indeed, a significant proportion of patients with pancreatic cancer succumb to their disease within a relatively short timeframe [15-17]. Surgical resection may be feasible and may prolong time to disease progression and mortality for selected patients. Neoadjuvant chemotherapy may be considered as a critical component of management for borderline resectable tumors. In the current study, we focused on volumetric changes in borderline resectable pancreatic cancers treated by neoadjuvant chemotherapy. We have documented changes in tumor volume after neoadjuvant chemotherapy in patients with borderline resectable pancreatic ductal adenocarcinoma. Patients with borderline resectable pancreatic ductal adenocarcinoma having available imaging data as part of initial workup have been studied.

All included patients received neoadjuvant chemotherapy for borderline resectable pancreatic ductal adenocarcinoma. We have performed a comparative analysis for tumor volumes at diagnostic imaging data of the patients and at reevaluation imaging data after neoadjuvant chemotherapy. We revealed that there was a mean decrease of 24% in tumor size after neoadjuvant chemotherapy in the selected group of patients with borderline resectable pancreatic ductal adenocarcinoma. Our results may have implications from the perspective of oncological management for patients with borderline resectable pancreatic ductal adenocarcinoma despite the need for further studies to shed light on these critical issues.

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