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Resection of Primary Pancreatic Neuroendocrine Tumors in the Metastatic Setting

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BACKGROUND

Surgical resection is the standard of care for small bowel neuroendocrine tumors (NETs) and is associated with improved survival, even in the presence of metastatic disease. Benefits of resection of primary pancreatic NETs (pNETs) in the metastatic setting are uncertain due to a lack of clinical data and the morbidity associated with pancreatic surgery. Herein, we report updated results of progression and overall survival of a cohort of metastatic pNET patients who underwent resection of their primary tumor compared to those that remained unresected.

METHODS

The healthcare systems database was searched to find primary pNET patients with metastases and at least 2 years of follow up. Patients were divided based on whether they underwent primary tumor resection or not, then further subdivided into those with synchronous or metachronous metastatic lesions. Unresected patients were analyzed using modified NCCN pancreatic adenocarcinoma surgical guidelines and categorized as “resectable,” (surgery possible at diagnosis) “borderline resectable,” or “locally advanced” (surgery not indicated at diagnosis). Primary outcomes included overall survival (OS) and progression-free survival (PFS), estimated by Kaplan-Meier curves. Results were compared using the log rank test. Demographics, additional treatments, tumor grade, resection type, and treatment-related adverse events were recorded.

RESULTS

284 patients with primary metastatic pNETs were analyzed. 155 underwent resection and 129 did not. 31% of resected patients had a perioperative complication and 70% developed long-term morbidities including new/worsening diabetes or exocrine insufficiency.

The median OS for the resected vs unresected group was 190 vs 45.6 months, respectively (HR 5.59, $p<0.0001$). The median PFS of the resected vs unresected group was 38.1 vs 8.5 months (HR 2.38, $p<0.0001$).

Among patients with synchronous metastases, the median OS for the resected, resectable (but not resected) and locally advanced groups was 142 months (95% CI 122-162 mo), 63 months (42-84 mo) and 50 months (40-60 mo), respectively. Survival was significantly better among resected patients, HR 0.31 (95% CI 0.18-0.51), $p < 0.0001$, whereas potentially resectable patient who were not operated on had similar survival to the unresectable group, HR 0.96 (0.55-1.67).

CONCLUSIONS

Resection of the primary pNET in the metastatic setting is associated with improved overall and progression free survival but also with frequent perioperative complications and long-term morbidity.

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