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Recurrence Patterns Following Surgical Resection of Gastroenteropancreatic Neuroendocrine Tumors: An Analysis from the NCCN Oncology Outcomes Database

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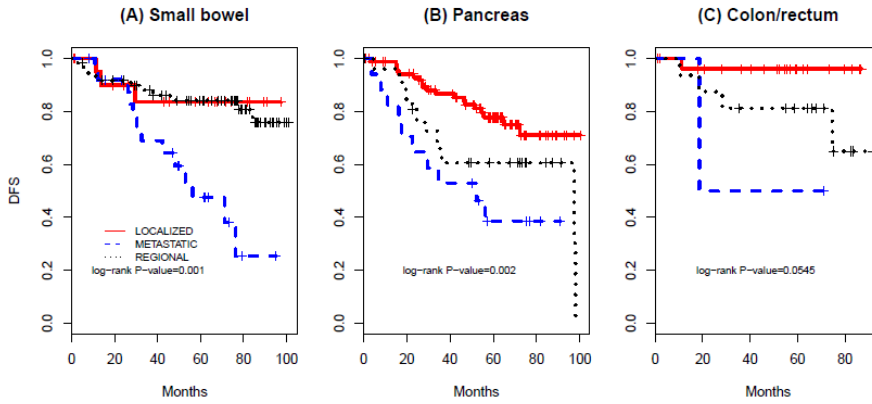
Background: Resection of gastroenteropancreatic NETs is known to prolong survival. Current NCCN guidelines recommend that complete surgical resection of the primary tumor and metastases should be performed if possible. However, large multicenter studies of recurrence patterns following resection have not been performed.

Methods: Patients ≥18 years who presented to 7 participating NCCN institutions after 2004 with a new diagnosis of a small bowel, pancreas, or colorectal NET were included. All underwent complete (R0) resection of the primary tumor and of synchronous metastases if present. Descriptive statistics were used to determine recurrence rates. Kaplan-Meier estimates were used to calculate time-associated endpoints. Comparisons were assessed by the log-rank test.

Results: Of 1125 patients with small bowel, pancreas, or colorectal NETs in the database, 294 patients underwent R0 resection. 51% of patients included in the analysis were male, 88% were Caucasian, and 99% had an ECOG PS 0-1. The median age at diagnosis was 55 (range 20-90); however, patients with a colorectal NET were younger ($p<0.001$). Median follow-up time from R0 resection was 62.1 months. Among patients with small bowel NET (n=110), 18% recurred. Among patients with pancreatic NET (n=138), 26% recurred. Among patients with colorectal NET (n=46), 11% recurred. Disease-free survival according to stage is shown below. Data on frequency and type of surveillance imaging performed will be reported to describe surveillance strategies of the member NCCN institutions.



Conclusions: R0 resection was associated with variable risk of recurrence across subtypes during 5 years of follow-up. Greater than 90% of patients who underwent an R0 resection were alive at 5-year follow-up, regardless of primary site. The presence of metastatic disease should not deter an attempt at R0 resection, when feasible. Median follow-up time was limited by database closure. Further inquiry into appropriate frequency and duration of surveillance following R0 resection is needed.