

Resection of At-Risk Mesenteric Lymph Nodes Improves the Outcome of Patients with Small Bowel Neuroendocrine Tumors

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Background: Neuroendocrine tumors of the small intestine commonly metastasize to regional lymph nodes. Single institutional reports suggest that removal of lymph nodes improves outcome, but comprehensive data is lacking. We hypothesized that the performance and extent of lymphadenectomy reported in a large administrative database would be associated with improved survival for jejunal and ileal neuroendocrine tumors.

Methods: A search of the SEER database was performed for patients with jejunal and ileal neuroendocrine tumors from 1977-2004. Descriptive patient characteristics were collected to include age at diagnosis, gender, race, grade, primary tumor size, lymph node status, number of lymph nodes resected, presence of distant metastasis, and operation. Statistical analyses were limited to patients with only 1 primary tumor to exclude patients with other malignancies. Univariate and multivariate analyses were performed to analyze the number of lymph nodes resected and the lymph node ratio (number of positive lymph nodes/total number of lymph nodes removed) to determine the effect on cancer-specific survival.

Results: Removal of any LNs was associated with improved cancer-specific survival when compared to patients with no LN removal reported ($p=0.0027$) on univariate analysis. Among those who had any LN removed, a median of 8 LNs were identified in resection

specimens with a median LNR of 0.29 (range 0-1). On multivariate analysis (adjusting for age and tumor size), patients with >7LNs removed experienced an improved cancer-specific survival over those with ≤7LNs removed (median survival not reached vs. 140 months; HR=0.573 [0.402, 0.817], p=0.002).

Conclusions: This review of a large number of surgical patients suggests that a complete regional mesenteric lymphadenectomy in conjunction with resection of the primary tumor will improve the survival of patients with small bowel neuroendocrine tumors.

