The Prognostic Value of Lymph Node Status and Extent of Lymphadenectomy in Pancreatic Neuroendocrine Tumors Confined To and Extending Beyond the Pancreas

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Background: The Prognostic Value of Lymph Node Status and Extent of Lymphadenectomy in Pancreatic Neuroendocrine Tumors Confined To and Extending Beyond the Pancreas.

Methods: SEER was queried for pNET between 1998-2012. (1) Binary-logistic-regression for factors associated with N-status, (2) Kaplan Meier for impact of T-stage, grade and nodal status on DSS and OS and (3) Cox Survival analyses for independent predictors of DSS and OS was performed. Extent of LA was evaluated by comparing >10 vs. <10 nodes dissected.

Results: 981 of 5349 patients fit the inclusion criteria. For T1-T2 tumors, N-status was affected only by tumor size. Cox-survival-analyses demonstrated that N-status ($p=0.001$), grade ($p<0.001$), patient age ($p=0.001$) and sex ($p=0.007$) were associated with OS, while tumor size ($p=0.260$) and tumor location ($p=0.331$) did not impact OS. For T3-T4 tumors, grade ($p<0.001$), sex ($p=0.004$), tumor size ($p=0.013$) and patient age ($p=0.007$) impacted OS; for this group N-status was not associated with OS ($p=0.789$). Specifically, for T1-T2 tumors, DSS ($p=0.003$) and OS ($p=0.008$) was longer for N0 vs N1, while N0 vs. Nx had similar OS and DSS. For T3-T4 patients, N-status did not affect outcome. For all T- and N-status, extended LA was not associated with an improved survival.

Conclusion: For T1-T2, N1-status is a significant predictor of negative OS. The comparable outcome of N0 vs. Nx supports limited resection without LA (including enucleation) for selected T1-T2 tumors. However, the inferior outcome of N1-status in T1-T2 tumors highlights the importance of focused preoperative assessment of regional lymph nodes with high quality imaging for this subgroup. Extended LA is unlikely to be helpful in T3-T4 tumors.

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