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# Metastatic Potential of Small Pancreatic Neuroendocrine Tumors: Not as Innocent as They Seem

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**BACKGROUND:** It is well accepted that appropriately selected patients with T2-T3 pancreatic neuroendocrine tumors (pNET) should undergo surgical resection. The optimal management of T1 (≤ 2cm) tumors remains unclear. While observation of T1 tumors is an accepted practice due to their presumed lower risk of metastasis, the precise metastatic potential of pNETs ≤ 2cm and clinical factors associated with metastatic progression are not well defined.

**METHODS:** We identified patients from the SEER registry diagnosed with pNET between 1998-2014 whom underwent surgery with a primary tumor size ≤ 2 cm. Additional inclusion criteria included complete information regarding age, sex, grade, location, number of lymph nodes dissected and nodal status, and complete survival and follow-up data. Binary logistic regression analyses were performed to evaluate the factors affecting nodal and systemic metastatic disease.

**RESULTS:** We identified 612 patients with T1 pNET. Mean age was 55 years; 48% were female. 72 (11.7%) had nodal metastasis, and 35 (5.7%) had M1 disease. In the multivariable analysis (Table 1), tumor location in the body (OR 1.903, p=0.03) or tail (OR 1.258, p=0.04), tumor grade III-IV (OR 2.042, p=0.022) and age (OR 0.963, p=0.01) were associated with presence of nodal metastases. Patient age (OR 0.919, p=0.009), tumor location in body (OR 1.407, p=0.038) or tail (OR

1.612, p=0.021) and tumor grade III-IV (OR 5.379, p=<0.001) were associated with presence of M1 disease.

**CONCLUSION:** Despite a notion that pNET ≤ 2cm have a low metastatic potential, the data presented here suggests that individualized risk stratification for optimal treatment management is required. Moreover, patients with high grade tumors and location in the body/tail should undergo closer surveillance and potentially be considered for surgical removal.