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Prognostic Relevance of a Novel AJCC Staging Classification for Neuroendocrine Tumors of the Pancreas

Jonathan Strosberg MD, Asima Cheema MD, Jill Weber MPH,
Domenico Coppola MD, Larry Kvols MD

H. Lee Moffitt Cancer Center and Research Institute, Tampa, Florida, USA

Background: The AJCC Cancer Staging Manual (7th edition, 2010) has introduced a novel TNM staging classification for pancreatic neuroendocrine tumors which is derived from the staging system for exocrine pancreatic adenocarcinomas. This classification has not yet been validated.

Methods: Patients with pancreatic neuroendocrine tumors treated at the H. Lee Moffitt Cancer Center between 1999 and 2010 were assigned a stage (I-IV) based on the new AJCC classification. Overall survival from time of initial diagnosis was measured and statistical significance calculated using the log-rank test. The prognostic relevance of the AJCC staging classification was compared to the relevance of a staging classification proposed recently by the European Neuroendocrine Tumor Society (ENETS).

Results: 425 patients with histologically proven pancreatic neuroendocrine tumors were identified. Both the novel AJCC classification and the ENETS classification were highly prognostic for survival ($p < 0.00001$; table 1).

Conclusions: The novel AJCC 7th Edition TNM classification for pancreatic neuroendocrine tumors is highly prognostic for overall survival and should be adopted in clinical practice.

Table 1: 5-year survival rates of patients classified by the AJCC vs. ENETS TNM staging systems

TNM Stage	Number of patients (AJCC)	5-year survival rate (AJCC)	Number of patients (ENETS)	5-year survival rate (ENETS)
Stage I	84	92%	25	100%
Stage II	41	84%	63	88%
Stage III	18	81%	55	85%
Stage IV	282	57%	282	57%