

# Is Surgical Cytoreduction for Stage IV Pancreatic Neuroendocrine Tumors Justifiable?



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## Background

Pancreatic neuroendocrine tumors (pNETs) comprise <2% of all pancreatic tumors. They can be present as functioning or non-functioning tumors. Long-term survival in patients with metastatic disease is generally poor, with recent Surveillance, Epidemiology, and End Results (SEER) data demonstrating 5- and 10-year survival rates of 19.5% and 7.1%, respectively.

## Hypothesis

We hypothesize that surgical cytoreduction is beneficial for patients with stage IV pancreatic neuroendocrine tumors.

## Methods

A database consisting of all patients seen at the Neuroendocrine Tumor Program (LSU/Ochsner Medical Center-Kenner) was queried for well-differentiated neuroendocrine tumors of the pancreas diagnosed between May 2006 and July 2012. Of the eighty-nine patients that fit this criteria, only the patients with pathologically confirmed liver metastasis were included for analysis (n=64/89, 72%). Tumor characteristics and surgical procedures were extracted and reviewed. Kaplan-Meier survival curves were generated and analyzed via MedCalc® Version 15.8.

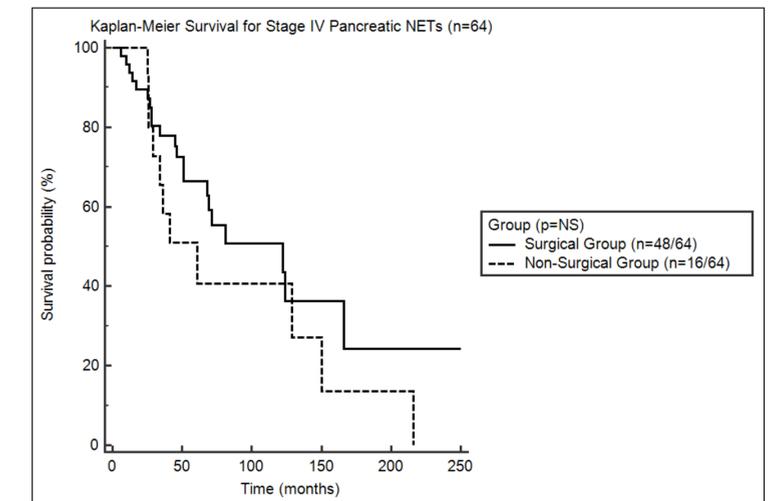
## Results

Sixty-four patients with pathologically confirmed metastatic pancreatic neuroendocrine tumor were included for analysis. Fifty-one patients (51/64, 80%) had non-functional pNETs and thirteen (13/64, 20%) had functional pNETs. Sixteen patients (16/64, 25%) had their primary pancreatic NET resected without simultaneous liver resection, while twenty-seven patients (27/64, 42%) underwent resection of both their primary pancreatic tumor and liver metastasis. Five patients (5/64, 8%) had only their liver metastasis surgically removed. The remainder of patients in this study (16/64, 25%) did not undergo any NET-related surgical procedure.

The survival analysis for the entire cohort is shown in the table below.

## Kaplan-Meier Survival Analysis

	Median Survival	5-year Survival Rate	10-year Survival Rate
<b>Surgical Group</b> (N=48/64, 75%)	81 months	66%	49%
<b>Non-Surgical Group</b> (N=16/64, 25%)	61 months	54%	45%



## Conclusion

Although our results proved not to be statistically significant, there is a survival advantage seen in the group who elected to have surgery. Therefore, we recommend aggressive surgical cytoreduction for patients with stage IV pancreatic neuroendocrine tumors for those who are low-risk surgical candidates. Further prospective studies are required to determine the efficacy of surgical cytoreduction in stage IV pNETs.