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Resection of Liver Metastasis in Midgut Neuroendocrine Tumors Affects 10-Year Survival

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Background: Midgut neuroendocrine tumors (mNETs) are frequently diagnosed after hepatic metastasis occurs, with a 5-year survival of 50%. We hypothesized that surgical cytoreduction of hepatic metastasis would impact survival rates.

Methods: Review of 1,362 NET patient charts revealed 319 patients with stage IV, well differentiated, mNETs of the jejunum and ileum. Patients with loco-regional disease only were excluded. M1 denoted metastasis confined to either the liver or extra-hepatic sites only (lung, pelvis, bone, ovary, pancreas, diaphragm). M2 denoted extensive metastatic disease to both the liver and other sites. Patients were further stratified based on resection status. Survival data was calculated using the Kaplan-Meier method.

Results: Of the 319 patients with distant disease, 117 had liver metastasis only, 37 had extra-hepatic metastasis only, and 165 had both (M2). For M1 patient's liver resected (n=80), liver not resected (n=37), extra-hepatic resected (n=31), extra-hepatic not resected (n=6) the five year survival rates were: 88%, 88%, 84%, and 100% respectively. The ten year survival rates were 79%, 39%, 70%, 67% respectively. For M2 patients that had been resected (n=147) and M2 patients not resected (n=18) the five year survival rates were 82% and 82% respectively. The ten year survival rates were 64% and 55% respectively.

Conclusions: Debulking of hepatic metastasis had a positive effect on 10-year survival ($p<0.0001$). Debulking of extra-hepatic disease had little effect on survival. Resection of hepatic metastasis is recommended. However, larger studies are required to assess the impact of debulking in extra-hepatic metastasis.