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Surgical Cytoreduction vs Systemic therapy in Patients with Metastatic Gastroenteropancreatic Neuroendocrine Tumors (GEP-NETS): NCDB Analysis.

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BACKGROUND

The role of surgical cytoreduction for metastatic gastroenteropancreatic neuroendocrine tumors (GEP-NETS) is considered an area of debate due to lack of prospective data. While retrospective and single institution analyses demonstrated higher survival rates associated with surgical cytoreduction, there was no comparison with systemic therapies alone in these studies. The aim of this analysis of the National Cancer Database (NCDB) was to evaluate the survival benefit of surgical cytoreduction compared to systemic therapy alone in metastatic GEP-NETS.

METHODS

Patients with stage IV well differentiated GEP-NETS were identified using the NCDB (2004-2020). Patients were stratified according to age, gender, grade, primary site, and facility type. Patients who received surgical cytoreduction with or without systemic therapies were compared to those who only received systemic therapies in univariate analysis. Associations between treatment characteristics and median overall survival (OS) were compared using Kaplan-Meier (KM) curves and Cox proportional hazards modeling.

RESULTS

3,183 stage IV GEP-NET patients were identified: 49.5% ($n = 1,574$) males and 50.5% ($n = 1,609$) females, with median age 62 years old. 66.7% ($n = 2,124$) had hepatic metastases. 69.8% ($n = 2,222$) of patients received cytoreduction alone, 23.4% ($n = 747$) received systemic therapy alone, and 6.7% ($n = 214$) received both. Patients who received cytoreduction alone or combined with systemic chemotherapy had higher median OS compared to systemic therapy alone (140.9 months vs 96.2 months vs 51.6 months, $p < 0.001$ respectively). Cytoreduction was associated with higher median OS for patients with both G1/2 and G3 tumors (table 1).

Regarding primary tumor, both midgut and pancreatic NETs had higher OS with surgical cytoreduction compared with systemic therapy alone (table 1). When stratified according to facility type, patients who received surgical cytoreduction at academic hospitals seemed to have better OS compared to community-based hospitals (table 1). Compared to academic hospitals, treatment at community-based hospitals was associated with inferior OS following cytoreduction (HR: 2.77, 95% CI: 1.20-6.41) but similar survival with chemotherapy alone (HR: 1.88, 95% CI: 0.39-9.06).

CONCLUSIONS

Patients with metastatic GEP-NETs who had surgical cytoreduction experienced higher median OS compared to patients treated with only systemic therapy, regardless of primary tumor site or histologic grade. Academic centers were also associated with higher median OS. These results need to be validated in future prospective studies.

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