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Demographic characteristics and survival in young onset colorectal neuroendocrine tumors

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BACKGROUND

The incidence of young-onset colorectal adenocarcinoma is predicted to continue rising over the next decade. Overall, data about young onset neuroendocrine tumors (NET) is scarce. In this analysis, we sought to investigate trends and differences in survival for colorectal NET in the young-onset population and to compare this with the average onset population. In addition, we seek to compare differences between adenocarcinoma and NET in the young-onset population.

METHODS

We conducted a retrospective study on colorectal NET patients and colorectal adenocarcinoma cancer patients between 1975 and 2016 using the Surveillance, Epidemiology, and End Results (SEER) database. Both univariate and multivariable analyses were performed to evaluate overall survival (OS) and disease-specific survival (DSS). Some data elements were separated by decade for analysis within this subgroup. The program used for analysis was SAS software 9.4 (SAS et al., USA.) Univariate and multivariable models were analyzed using Cox proportional models. Demographic differences between urban and rural populations were assessed using the Wilcoxon Rank Sum test (continuous variable) and Chi-square test (categorical variables).

RESULTS

We studied 61,705 patients aged 20-49 years with any colon or rectal cancer. Of these, 8% had NET, and 92% had adenocarcinoma. We found that in the 20-39-year-old age group NETs were more common (33.4%) than adenocarcinoma (25%). The white population was overrepresented in the adenocarcinoma group compared to the NET group (57% vs 43%). On the other hand, the Black population was overrepresented in the NET group compared to the adenocarcinoma group (21% vs 13%). Rectum was the most common site of NET (79%), whereas the colon was the most common site for adenocarcinoma (57%). NET patients were likely to have a smaller tumor compared to adenocarcinoma. They were also more likely to have local procedures than the adenocarcinoma patients (64% vs 8%). Not surprisingly, NET patients within the young age group had much better 5-year OS (88% vs. 63%) and DSS (91% vs. 66%) than adenocarcinoma. However, this gap narrowed in the >60 yr population.

CONCLUSIONS

Our database analysis uncovered many demographic disparities in young-onset colorectal NET. At the same time, young-onset NET patients did much better in terms of survival compared to the adenocarcinoma patients in the same age-group; such differences dissipated in the elderly age group, which may be rooted in biological differences between tumors in the older population, and potentially differences in treatment effectiveness/ tolerance.