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Geographic and Demographic Disparities in Neuroendocrine Tumors (NETS): A Population-Based Study

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BACKGROUND: The incidence and prevalence of Neuroendocrine Tumors (NETs) are rapidly rising. There are very few studies investigating the role of sociodemographic factors on NETs. The aim of our study was to identify the disparities in the NET population.

METHODS: We conducted a retrospective analysis utilizing the Surveillance, Epidemiology, and End Results (SEER) database, and studied NETs patient population from 1973 to 2015. Univariate and multivariate analyses were performed to evaluate patients' disease-specific survival (DSS) and overall survival (OS). Different socio-demographic factors including location of residence: urban area (UA) versus rural area (RA), gender, race, insurance status and marital status were included in the analysis.

RESULTS: A total of 53,522[RA: N=5,517; UA: N=47,517] patients were included in the analysis. The incidence of NETs was found to be rising in both RA and UA but more rapidly in UA. RA was associated with more advanced stage at presentation in comparison to UA. Cause-specific mortality remained higher in RA than UA throughout the study period. In the multivariate model, RA had a trend towards poorer DSS (HR:1.02, P=0.615) and a worse OS compared to UA (HR=1.05, P=0.053). Multivariate analysis showed significantly worse DSS and OS in uninsured, single and male patients compared to insured, married and female patients respectively.

CONCLUSION: Our study identified sociodemographic disparities on NET outcomes. Access to healthcare could be a potential contributing factor although differences in environmental exposure, health behavior and tumor biology could also be responsible. Further population-based studies are required to address these disparities.