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Thyroid

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Variation in the Diagnosis of Noninvasive Follicular Thyroid Neoplasm With Papillary-Like Nuclear Features (NIFTP) in the United States

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Background: The North American Association of Central Cancer Registries (NAACCR) develops and promotes uniform data standards for cancer registries, such as uniform cancer coding, and is used by all central cancer registries in the United States (US) and Canada, including Surveillance, Epidemiology and End Results (SEER). Effective January 1, 2017, the NAACCR modified its coding scheme and noninvasive encapsulated follicular variant of papillary thyroid cancer (EFVPTC) was reclassified as non-invasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP) to reflect the indolent nature and very low risk of adverse outcomes of this thyroid tumor. The diagnostic use of NIFTP was anticipated to impact tens of thousands of patients in the US. Since NIFTP is no longer considered a cancer, as of January 1, 2021, it was no longer a reportable diagnosis in SEER. However, little is known about how the diagnosis of NIFTP was utilized across different regions and patient populations in the US when it was a reportable diagnosis. **Methods:** Data was extracted from the US SEER-21 cancer registry (2000-2018). The study cohort comprised of individuals diagnosed with papillary or follicular thyroid cancer (2000-2018), or NIFTP (2017-2018). We examined the annual incidence of thyroid cancer by subtypes and NIFTP. Using data for 2018, we determined the rates of NIFTP for each of the 16 sites included in SEER-21. In addition, we compared the demographics of patients diagnosed with NIFTP to that of patients diagnosed with papillary and follicular thyroid cancer using Chi-square test. **Results:** Between 2010 and 2018, we identified a total of 191,107 cases (182,893 PTC, 7,445 FTC, and 769 NIFTP). Incidence of FVPTC sharply declined from 2015 to 2018, with observed increases in NIFTP and encapsulated PTC/ invasive EFVPTC each accounting for 17% and 10% of the decline in FVPTC, respectively. High heterogeneity was observed in the regional incidence of NIFTP in 2018, with incidence rates ranging from 0.0% (Alaska) to 5.8% (Seattle-Puget Sound). Based on 2018 data, a diagnosis of NIFTP (2.2% of total thyroid cancer cases) was significantly associated with female sex (P=0.001), Black race (P<0.001), and non-Hispanic ethnicity (P<0.001) compared to diagnosis of papillary and follicular thyroid cancer. **Conclusion:** There is marked variation in the use of the NIFTP diagnoses. The recent NAACCR coding change that resulted in NIFTP, a tumor with uncertain malignant potential and for which there is no long-term outcome data available, no longer being a reportable diagnosis will disproportionately affect women and Black patients, and patients who reside in regions with higher rates of NIFTP diagnoses.

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