

Thyroid Cancer: Epidemic and Perspective

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EDITORIAL NOTE

Thyroid cancer is the most common type of endocrine cancer, of which the incidence has dramatically increased worldwide within the past few decades. The reasons for the observed rapid increase still aren't fully understood, but evidence suggests that over diagnosis, with the advancement in detection methods and screening policies. However, the effect of radiation exposure at a young age, environmental/lifestyle factors remains speculative.

FACTORS LEADING TO INCREASED DETECTION OF THYROID CANCER

Health care utilization

Thyroid cancer has dramatically increased after the implementation of routine screening in healthy people.

Various studies found that thyroid cancer incidence would be elevated in communities with higher household income, education, and health insurance coverage. In Surveillance analysis, Epidemiology, and End Results (SEER) data, papillary thyroid cancer (PTC) incidence was correlated with sociodemographic markers of health care access. It is positively correlated with rates of college education, white-collar employment, and family income and negatively correlated with the percentage of residents who were uninsured, in poverty, unemployed, of non-white ethnicity, non-English speaking, and lacking high school education. In another study using the 1999–2009 U.S. National Programs of Cancer Registries data, the rate of thyroid cancer was correlated with the population density of endocrinologists and general surgeons in the area, as well as the use of ultrasonography. Approximately half the variability in state-level thyroid cancer incidence might be explained by the three factors, though underestimation thanks to misclassification may have occurred as otolaryngologists weren't captured in the database, and some general surgeons or endocrinologists may not focus on the thyroid.

These studies suggest that increased detection due to health care access and utilization could explain some of the variability in thyroid cancer incidence.

Increased Use of Imaging Examination

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Increased frequency and extent of thyroid surgery

In U.S., the annual number of thyroidectomies increased 39%, from 66,864 cases in 1996 to 92,931 cases in 2006. Surgery (total or subtotal thyroidectomy) was more frequently performed than before for nonmalignant thyroid diseases, like hyperthyroidism or benign thyroid nodules. During a study which enrolled patients who had undergone total thyroidectomy for hyperthyroidism, incidental papillary thyroid microcarcinomas (PTMC) were found in 28% of the patients within the euthyroid goiter group and 26% of the patients with Graves' disease. More specimens to be examined for carcinoma cause Increase number of thyroidectomies, possibly another contributing factor for increased detection.

CONCLUSION

Widespread screening resulting in detection of otherwise clinically occult cases is believed to possess contributed to a clear increase

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of thyroid cancer incidence globally. However, epidemiological, biological, and clinical data don't support the apparent increase because the exclusive explanation of growth in thyroid cancer incidence and suggest that a real increase of cases has occurred.

In an effort to manage and combat the increasing trend of thyroid cancer, much effort has been dedicated to the design for modifiable risk factors of this malignancy. Among the wide selection of studied factors affecting thyroid cancer risk, infancy exposure to

iodine radiation is that the only well-established risk factor. This might possibly be explained by the unparalleled magnitude of the exposure at a developmental stage of the thyroid glands in those studies. The analyses of other potential risk factors haven't presented with conclusive evidence, and studies of the disease mechanisms often indicate multiple pathways/agents which will or might not play a big role during a given population.