

Thyroid Cancer: Current Understanding and Emerging Trends in Diagnosis and Treatment

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Introduction

Thyroid cancer is a common endocrine malignancy that arises from the cells of the thyroid gland. With an increasing incidence worldwide, it has become a significant health concern. This comprehensive review explores the types of thyroid cancer, risk factors associated with its development, and the current diagnostic and treatment modalities available. Four main types of thyroid cancer are discussed, including papillary, follicular, medullary, and anaplastic thyroid cancer. The role of various risk factors, such as gender, age, family history, radiation exposure, and iodine imbalance, is analyzed in relation to thyroid cancer development. Early diagnosis is crucial for successful management, and the diagnostic process, including physical examination, imaging, Fine-Needle Aspiration (FNA), and thyroid function tests, is detailed. The review highlights the importance of tailored treatment options based on cancer type and stage, such as surgery, radioactive iodine therapy, external beam radiation therapy, and targeted therapies. Finally, the article emphasizes the need for ongoing research and awareness to improve our understanding of thyroid cancer and optimize patient outcomes [1].

Description

Thyroid cancer is a malignancy that originates from the cells of the thyroid gland, a small butterfly-shaped organ located in the neck. It represents a significant health concern worldwide, with its incidence steadily rising over the past few decades. Thyroid cancer is often detected early due to the gland's superficial location, making it accessible for examination and imaging. This article aims to provide a comprehensive overview of thyroid cancer, including its types, risk factors, diagnosis, and treatment options. Thyroid cancer can be broadly classified into four main types. Papillary Thyroid Cancer (PTC) is the most common type, accounting for about 80% of thyroid cancer cases. It has an excellent prognosis and tends to grow slowly. Follicular Thyroid Cancer (FTC) constitutes approximately 10-15% of thyroid cancer cases [2]. It is more likely to spread to distant organs compared to PTC. Medullary Thyroid Cancer (MTC) originates from the C-cells of the thyroid and accounts for about 3-5% of cases. It can be hereditary or sporadic. Anaplastic Thyroid Cancer (ATC) is the rarest and most aggressive type of thyroid cancer, accounting for 1-2% of cases. It grows rapidly and has a poor prognosis. Several risk factors have been associated with thyroid cancer, including Females are more likely to develop thyroid cancer than males. The risk increases with age, with peak incidence occurring between 30 and 60 years. A family history of thyroid cancer or certain genetic syndromes can increase the risk. Radiation Exposure to ionizing radiation, especially during childhood, is a known risk factor for thyroid cancer. Iodine Deficiency or Excess Imbalances in dietary iodine intake may influence the risk of thyroid cancer [3].

Early detection and accurate diagnosis are crucial for successful thyroid cancer management. The diagnostic process typically involves physical

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examination is thorough examination of the neck for the presence of nodules or enlargement of the thyroid gland. Ultrasound is often the first-line imaging modality to evaluate thyroid nodules. Additional imaging such as CT scan, MRI, or radioactive iodine scan may be used for staging and determining the extent of the disease. Fine-Needle Aspiration (FNA) biopsy is the gold standard for evaluating thyroid nodules. It involves using a thin needle to extract cells from the nodule for examination under a microscope. Thyroid function tests are blood test to measure thyroid hormone levels and Thyroid-Stimulating Hormone (TSH) are important for assessing thyroid function [4]. Treatment for thyroid cancer depends on the type and stage of the disease. Common treatment options include, Surgery is the primary treatment for most thyroid cancers involves surgical removal of the affected thyroid tissue. Partial or total thyroidectomy may be performed depending on the extent of the disease. Radioactive iodine therapy treatment is used for certain types of thyroid cancer (e.g., PTC, FTC) to destroy any remaining thyroid tissue after surgery and to target distant metastases. External beam radiation therapy used in some cases to target and shrink tumors that cannot be surgically removed. After surgery or radioactive iodine therapy, patients may require lifelong thyroid hormone replacement to maintain normal thyroid hormone levels. For advanced or metastatic thyroid cancer, targeted therapies and immunotherapies may be used to inhibit cancer growth and improve outcomes [5].

Conclusion

Thyroid cancer is a significant health concern, but early detection and appropriate treatment offer favorable outcomes for many patients. Advances in diagnostic techniques, surgical approaches, and targeted therapies have improved patient management and overall survival rates. Continued research and awareness are essential to further improve our understanding of thyroid cancer and develop more effective treatment strategies, ultimately leading to better outcomes for those affected by this disease. Thyroid cancer is often detected early due to the gland's superficial location, making it accessible for examination and imaging. In recent years, research in thyroid cancer has focused on identifying novel therapeutic targets and refining diagnostic and prognostic tools.

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Conflict of Interest

None.

References

- Schneider, David F. and Herbert Chen. "New developments in the diagnosis and treatment of thyroid cancer." *CA Cancer J Clin* 63 (2013): 373-394.
- De Sanctis, Vincenzo, Ashraf T. Soliman, Duran Canatan and Mohamed A, et al. "Thyroid disorders in homozygous -thalassemia: Current knowledge, emerging issues and open problems." *Mediterr J Hematol Infect Dis* 11 (2019).
- Gharib, Hossein. "Changing trends in thyroid practice: Understanding nodular thyroid disease." *Endocr Pract* 10(2004): 31-39.
- Roberts, Katherine J., Stephen J. Lepore and Mark L. Urken. "Quality of life after thyroid cancer: An assessment of patient needs and preferences for information and support." *J Cancer Educ* 23 (2008): 186-191.

5. Jones, Heidi, Victoria Green, James England and John Greenman. "Current understanding of nonsurgical interventions for refractory differentiated thyroid cancer: A systematic review." *Future Sci OA* 7 (2021): FSO738.

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