# Antineoplastic agents associated with thyroid dysfunction

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Antineoplastic agents such as immunotherapies and targeted therapies that specifically target signaling pathways in cancer cells are associated with thyroid dysfunction in 20%-50% of cancer patients taking them, which can adversely affect patients' quality of life, according to a study published Oct. 18 in the *Journal of the National Cancer Institute*.

Over the past two decades, novel antineoplastic agents have been introduced that inhibit specific cellular processes to limit cancer cell growth. Some of these agents cause thyroid dysfunction, which physicians often overlook because of the complexity of the clinical picture in cancer patients. The symptoms of thyroid dysfunction, such as fatigue, weakness, depression, memory loss, and cardiovascular effects can be wrongly attributed to the primary disease. If under-diagnosed, thyroid dysfunction can adversely affect a patient's quality of life.

To understand the thyroid-related side effects of antineoplastic agents, their frequency, and underlying mechanisms, Ole-Petter Riksfjord Hamnvik, M.D., of the Division of Endocrinology, Diabetes, and Hypertension at Brigham and Women's Hospital in Boston, and colleagues reviewed articles on thyroid dysfunction in cancer patients. The researchers found that there are no known strategies to prevent thyroid disease in patients receiving these new antineoplastic agents, and that possible preventative measures may be more toxic than the thyroid disease itself. They also say that screening for thyroid disease is likely beneficial, but note that there were no screening recommendations for asymptomatic patients in the literature they reviewed. However, in this review, the authors provide their own recommendations for patients based on the pattern of abnormalities with each agent, in addition to recommending the monitoring of thyroid function tests in clinical trials of antineoplastic agents.

The researchers also recommend several paths of research that should be pursued, namely knowledge of the biological effects of the antineoplastic agents on the thyroid, so they can identify possible preventative strategies and improve the proposed screening strategies. They also recommend performing large randomized clinical trials of screening and treatment of thyroid disease to evaluate the improvements in patient quality of life and fatigue as well as to evaluate the unanticipated effects of cancer outcomes.

The researchers write, "Treatment for thyroid diseases is safe and likely to enhance patient quality of life, as well as potentially allow effective treatments for the underlying cancer to continue."

They note however, that there are many levels of uncertainty and that most of the data are derived from case reports or case series, small prospective studies, or laboratory-based studies. They recommend close monitoring of patients receiving these antineoplastic agents. "This may allow early recognition and treatment of thyroid disease, allowing continued treatment of the underlying cancer, as well as improving the quality of life of the patient."

**More information:** jnci.oxfrodjournals.org/

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