

# Study finds worse survival when specific thyroid cancers spread to bone

14 April 2017



Megan Haymart, M.D. Credit: Michigan Medicine

When cancer metastases, bone unwittingly offers a friendly place for tumor cell growth—only to have its hospitality betrayed by pathologic fractures, spinal cord compression, the need for bone surgery or irradiation, and an increased risk of death.

In the largest-known study on [bone metastases](#) in thyroid cancer, researchers at the University of Michigan Comprehensive Cancer Center found that [patients](#) with follicular and medullary thyroid

cancer had the highest rate of cancer-related bone lesions and fractures and an increased risk of death.

"We know that metastases are bad. But patients in our study who had bone metastases had a worse survival rate compared to patients who had metastases at other distant sites," says Megan Haymart, M.D., assistant professor of medicine at Michigan Medicine and one of the researchers on the study. "This suggests that bone metastases are a uniquely poor prognostic indicator."

However, patients with localized or regional thyroid cancer—without metastases—have an excellent prognosis, adds Palak Choksi, M.D., assistant professor of medicine at Michigan Medicine and lead author of the study.

The Michigan Medicine study, published in the *Journal of Clinical Endocrinology and Metabolism*, looked at all forms of thyroid cancer—medullary, follicular, papillary, and anaplastic. The study was based on SEER-Medicare data and involved approximately 30,000 patients, 70 percent of whom were Caucasian women with an average age of 64. The high percentage of women in the study reflects the fact that thyroid cancer is three times more common in women than in men.

"Only about 8 percent of patients in the study had either a bone metastasis or skeletal-related event such as a cancer-related bone fracture," explains Haymart.

Previous studies that mainly looked at differentiated thyroid cancer and bone metastases had a significantly smaller sample size and were largely from single institutions that enrolled patients with differentiated thyroid cancers.

Currently, the data on medications for skeletal metastases in thyroid cancer has been extrapolated largely from breast cancer and other cancers that

often metastasize to bone, says Choksi. Very little research has focused specifically on the use of medications to treat thyroid cancer with skeletal complications.

"Patients with thyroid cancer have been understudied," says Haymart.

This research will help tailor treatment and management, and it's especially useful for patients with high-risk thyroid [cancer](#)—medullary and follicular.

"Now that we have identified that certain [thyroid](#) cancers are at a higher risk for skeletal-related events, we can appropriately design studies looking at drugs to see which medication could prevent or effectively treat such complications," says Choksi.

"Through our study, we want other doctors to be aware that there is a higher likelihood of skeletal lesions or fractures in this high-risk population," says Choksi.

The authors acknowledge that there are limitations to the study, and the applicability of the research to younger patients is reduced. "Despite this limitation, our study parallels on a larger scale what other smaller studies have shown in a varied population group," says Choksi.

For high risk patients, future research is needed to show how to prevent and treat bone metastases. Studies have already shown that denosumab and bisphosphonates are beneficial for patients with other cancers of the bone. The researchers suspect these drugs may also be beneficial for patients with [thyroid cancer](#) and [bone](#) metastases, although additional prospective studies are need.

**More information:** Palak Choksi et al, Skeletal Complications and Mortality in Thyroid Cancer: A Population-Based Study, *The Journal of Clinical Endocrinology & Metabolism* (2017). [DOI: 10.1210/jc.2016-3906](#)

Provided by University of Michigan

APA citation: Study finds worse survival when specific thyroid cancers spread to bone (2017, April 14)

retrieved 12 October 2022 from <https://medicalxpress.com/news/2017-04-worse-survival-specific-thyroid-cancers.html>

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