

Ethanol injection helps manage bone metastasis in thyroid cancer patients

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Percutaneous ethanol injection (PEI)—an injection of ethanol (alcohol) through the skin directly into a bone tumor to kill cancer cells—may be a valuable ancillary treatment for thyroid cancer patients whose cancer has spread to the bone. Japanese researchers announced these findings during the 54th Annual Meeting of SNM, the world's largest society for molecular imaging and nuclear medicine.

"PEI may be a valuable adjunctive or secondary treatment to radioiodine therapy, and it may contribute to better management of thyroid cancer patients with bone metastasis," said Kunihiro Nakada, clinical assistant professor in the Department of Radiology at Hokkaido University Hospital and the hospital chief in the Department of Radiology at LSI Sapporo Clinic, both in Japan.

Reports indicate that this year about 33,550 new cases of thyroid cancer will be diagnosed in the United States, and of those, more than 25,000 will occur in women. Thyroid cancer is a disease in which cancer (malignant) cells are found in the tissues of the thyroid gland. The thyroid gland, located at the base of the throat, makes important hormones that help the body function normally. Cancer can spread beyond that site and invade other parts of the body (metastasis), and thyroid cancer is often listed among the top most common causes of metastatic bone lesions. The primary treatment for patients with thyroid cancer is surgery, which is followed by thyroid hormone therapy. Radioactive iodine may be used to destroy thyroid cancer cells after surgical removal of the thyroid gland.

"Although thyroid cancer generally has a favorable prognosis, bone metastasis can be hard to be eradicate," said Nakada. "Although radioiodine therapy and/or surgery are valuable therapeutic strategies, management of bone metastasis has been challenging since it is likely that bone metastasis will show resistance to radioiodine therapy or that a tumor cannot be surgically removed," he explained.

"Our study is a therapeutic approach to treat metastatic bone tumor from thyroid cancer by injecting absolute ethanol directly into the tumor," explained Nakada. "Absolute ethanol induces direct necrosis (cell death) of the tissue in the area where it is distributed. Therefore, if absolute ethanol is selectively injected into a malignant tumor, selective destruction of the tumor may be expected," he added. In their study, 12 patients with radioiodine-ineffective bone metastasis from thyroid cancer underwent PEI. More than 50 percent reduction in tumor volume was achieved in all.

"PEI appears effective in terms of palliation (control) of symptoms (such as pain) and tumor size reduction and does not induce significant systemic side effects," noted Nakada. "In addition, PEI is a feasible treatment for radioiodine-ineffective tumors and has a potential for improving general performance or quality of life for selected patients," he added.

Additional research should be done to optimize treatment, said Nakada, including determining doses of ethanol, number of times PEI sessions should be repeated, how to predict outcome earlier and what other therapeutic options could be better combined with PEI to enhance efficacy.

Source: Society of Nuclear Medicine

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