



THYROID CANCER

Implications of bisphosphonate use in thyroid cancer related bone metastatic disease

BACKGROUND

Bisphosphonates are a class of drugs that decrease bone breakdown. They are commonly prescribed for osteoporosis treatment to strengthen bones and prevent fractures. Zoledronic acid is also used in patients with cancers that spread to the bone, such as breast, prostate and lung cancers, as they decrease risk of complications related to bone metastasis itself. These complications include risk for spinal cord compression, need for radiation therapy, need for surgery and cancer-related fractures. Zoledronic acid is given more frequently in cancer patients than in patients with osteoporosis. While the bisphosphonate medications are generally well tolerated, a rare side effect, known as osteonecrosis of the jaw, may affect the teeth in patients treated with this higher dose.

Thyroid cancer is the third most common cancer to spread to bone after breast and prostate cancers. To date, management of metastatic bone disease in thyroid cancer has been conservative, with use of surgery to decrease risk of impending fracture and radiation therapy for pain control. In this study, the authors analyzed effect of monthly zoledronic acid infusion on development of bone complications in thyroid cancer patients with spread of the cancer to the bone.

THE FULL ARTICLE TITLE:

Orita Y et al Zoledronic acid in the treatment of bone metastases from differentiated thyroid carcinoma. *Thyroid* 2011;21:31-5. Epub November 8, 2010.

SUMMARY OF THE STUDY

A total of 50 thyroid cancer patients with spread of the cancer to the bone took part in the study. Of these, 22 patients were treated with monthly zoledronic acid for up to 2.75 years. All 50 patients received surgery and radiation therapy as needed. The development of cancer-related fractures or spinal cord compression occurred in 3 of 22 (13.4%) patients treated with zoledronic acid versus 14 of 28 (50%) untreated patients. Two (9.1%) zoledronic acid-treated patients developed osteonecrosis of the jaw despite regular dental follow-up.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

While this small study is limited, its results point toward beneficial effect of zoledronic acid in decreasing bone complications in patients with thyroid cancer spread to the bone. More studies are needed to better define 1) effect on bone complications, 2) the best frequency of administration and dose needed to achieve beneficial effect of zoledronic acid and 3) risk of long-term complications from such therapies. This is particularly important in patients with metastatic thyroid cancer with long life expectancies despite distant metastatic disease.

— Mona Sabra, MD

ATA THYROID BROCHURE LINKS

Thyroid cancer: http://thyroid.org/patients/patient_brochures/cancer_of_thyroid.html

ABBREVIATIONS & DEFINITIONS

Bisphosphonate medications: a class of drugs that are commonly prescribed for osteoporosis treatment to strengthen bones and prevent fractures. Commonly used bisphosphonates are Alendronate (Fosamax), Risedronate (Actonel), Zoledronic acid (Zometa, Reclast) and Ibandronate (Boniva). In addition, Zoledronic acid is used to prevent bone complications in cancer patients with spread of cancer to the bone.

Cancer metastasis: spread of the cancer from the initial organ where it developed to other organs, such as the lungs and bone.

Osteonecrosis of the jaw (ONJ): a condition where decreased blood supply occurs in part of the jaw bone, leading to pain and bone decay. ONJ can occur spontaneously or is associated with steroid use, radiation therapy and bisphosphonate therapy. Risk for ONJ in setting of bisphosphonate use is less than 1 in 100,000 person-years and is dependent on frequency, duration and mode of administration of the drug (intravenous preparation, higher dose, longer duration are associated with increased risk). Avoidance of dental surgery while on bisphosphonate therapy decreases ONJ risk.