Metastatic Breast Cancer: BONE PROTECTION

Bone metastases and bone health
As treatment for metastatic breast cancer (MBC) improves, so does survival. With people living longer with MBC, it’s even more important to prevent and treat any side effects of bone metastases.

Untreated side effects of bone metastases can lead to:
- Chronic pain.
-Emergency room visits/hospitalization.
- Surgery to prevent or repair broken bones.
- Radiation to help control bone pain.
- Pressure on the spinal cord which can cause pain, weakness and interfere with bladder and bowel control.

Related online resources:
- Metastatic Breast Cancer
- Clinical Trials
- Questions to Ask Your Doctor-Metastatic Breast Cancer: Bone Protection
- Managing Side Effects and Supportive Care

Metastatic breast cancer (MBC) in the bone occurs when breast cancer cells spread beyond the breast to the bone (bone metastases). Bone metastases are not bone cancer. Even though the cancer is in the bone, it’s still breast cancer. Bone metastases are treated with breast cancer drugs, not bone cancer drugs.

The most common sites for bone metastases include the spine, skull, ribs, pelvis and long bones in the arms and legs. For people with estrogen receptor-positive MBC, bone is the most common site of metastases.

How do bones work in our body?
Bones provide support for our bodies to walk or stand. They are made up of tissues, calcium and bone cells. Bone is always forming and breaking down in our bodies to keep bones strong and release calcium into the blood stream.

How do breast cancer cells affect bones?
A person with bone metastases may have both osteolytic and osteoblastic areas.
- Osteolytic or lytic metastases cause holes in the bone. They can look like holes like in swiss cheese. They weaken the bones and cause them to break easily.
- Osteoblastic or blastic metastases make bone appear more dense. These areas of the bone are abnormal and break more easily than normal bone.

Bone metastases can lead to bone complications, including bone pain, bone fractures (breaks), loss of mobility and/or spinal cord compression.

For more information, visit komen.org or call Susan G. Komen’s breast care helpline at 1-877 GO KOMEN (1-877-465-6636) Monday through Friday, 9 AM to 10 PM ET.
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How to prevent and manage bone complications

If you have bone metastases, your treatment plan will include a bone-strengthening drug (a bisphosphonate or denosumab). These drugs can strengthen and protect your bones and reduce bone complications. Talk with your doctor to discuss the use of these drugs and find one that is right for you.

Use of a bone-strengthening drug can:
- Help reduce pain caused by bone metastases.
- Lower the risk of bone fractures related to bone metastases.
- Reduce the need for radiation therapy or surgery related to bone fractures and bone pain.

### Bisphosphonates RANK ligand (RANKL) inhibitor

<table>
<thead>
<tr>
<th>Drug names (brand names)</th>
<th>Pamidronate (Aredia)</th>
<th>Zoledronic acid (Zometa)</th>
<th>Denosumab (Xgeva)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How is it given?</td>
<td>Given through an IV</td>
<td>Given through an IV</td>
<td>Given by injection under the skin</td>
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<tr>
<td>How often is it given?</td>
<td>Every 3-4 weeks</td>
<td>Every 12 weeks</td>
<td>Every 4 weeks</td>
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What are the side effects of bone-strengthening drugs?

Bisphosphonates and denosumab can cause bone, joint or muscle pain. These types of pain usually only last for 1-2 days, and only with the first treatment.

If you start having muscle twitching or increased anxiety, let your doctor know. Your doctor may want to check your calcium level.

In rare cases, a disorder called osteonecrosis of the jaw may occur. To reduce this risk, visit the dentist and take care of any dental procedures before you start either drug.

Managing pain from bone metastases

Bone-strengthening drugs can reduce pain from bone metastases. But they aren’t the only treatment option for bone pain. If the bone pain is mild, pain relievers such as ibuprofen (Advil or Motrin), naproxen (Aleve or Naprosyn) or acetaminophen (Tylenol) may help. Tramadol or opioids (such as morphine or oxycodone) can be added if the pain is more severe.

Radiation therapy to the bone can relieve pain at the site of the tumor(s) and prevent fractures. Orthopedic surgery can prevent or repair bone fractures.

Drug therapies that control MBC throughout the body can also help treat the pain caused by bone metastases. For example, chemotherapy can relieve bone pain by shrinking the cancer so it doesn’t press on the spine or other bones.