Novel cancer drug has potential, study reports

November 12 2010, By Sara Hammond

(PhysOrg.com) -- Monthly injections of the drug in breast cancer patients whose disease had spread to the bone helped reduce pain and prevent complications with less toxicity than current treatments.

Monthly injections of a new drug in breast cancer patients whose disease has spread to the bone can delay and reduce pain and prevent complications with less toxicity than other treatments available, according to results of a worldwide study reported by Dr. Alison T. Stopeck, director of the Arizona Cancer Center's clinical breast cancer program and lead author of a paper appearing in a recent issue of the Journal of Clinical Oncology.

As many as 75 percent of patients with metastatic breast cancer develop cancer in their bones, resulting in bone destruction and skeletal complications – also called skeletal-related events, or SRE – including fractures, spinal cord compression or the need to receive radiation or surgery to the bone. Administering intravenous bisphosphonates has been the standard of care for treating bone metastases and preventing these disabling SREs.

Stopeck's international, Phase III, randomized, double-blind study compared the effects of administering denosumab subcutaneously and zoledronic acid intravenously in 2,046 patients with advanced breast cancer.

Denosumab, which specifically inhibits the cells responsible for bone

destruction, was superior to zoledronic acid (Zometa) and reduced the risk of skeletal-related events by 18 percent.

Denosumab reduced the risk of developing multiple SREs by 23 percent, compared to zoledronic acid. Patients administered Zometa also reported side effects associated with more acute-phase reactions, such as fever and other flu-like symptoms and renal complication. Overall survival and disease progression rates were similar across the study groups.

"What is exciting about the trial is now we have a new therapy for our patients with bone metastases that is more efficacious, less toxic and more convenient to administer," Stopeck said. "Denosumab is a truly novel agent as it specifically targets the cells responsible for the bone damage, resorption and destruction caused by bone metastases that lead for complications and pain."

"Denosumab also significantly delayed the time patients began experiencing moderate or severe pain compared to Zometa. What's most important for patients is preventing pain. The pain is what makes bone metastases so brutal," Stopeck said.

More convenience is also important for cancer patients, she said. Because denosumab is a subcutaneous injection that does not cause kidney toxicity, kidney monitoring is not needed and patients do not have to have intravenous access or receive an IV. Treatment with denosumab takes minutes compared to several hours with Zometa, which requires blood work prior to intravenous administration of the therapy.

"Unfortunately, with both Zometa and denosumab treatment, rare cases of osteonecrosis of the jaw were observed," Stopeck said.

Stopeck initially presented the study results at the 2009 European CanCer Organisation and European Society for Medical Oncology

meetings in Berlin and at the San Antonio Breast Cancer Symposium in December 2009. She presented exploratory analyses from the study at the 2010 American Society for Clinical Oncology annual meeting in June. The study will be highlighted at the CTRC-AACR San Antonio Breast Cancer Symposium to be held Dec. 8-12.

Denosumab's manufacturer, Amgen, has received priority review from the Food and Drug Administration, a designation granted to drugs that offer major advancements in treatment or provide a treatment where no adequate therapy exists. The drug is also being studied in numerous tumor types across the spectrum of cancer-related bone diseases.

Provided by University of Arizona