Breast cancer treatment halts bone metastases and also protects bones

March 12 2013

A team of researchers at the MedUni Vienna, led by Michael Gnant from the University Department of Surgery at the MedUni Vienna, has discovered two further positive effects of the drug Everolimus, which is already being used successfully as a hormone treatment for breast cancer. "The drug itself also halts the development of bone metastases that are directly associated with the breast cancer," explains Gnant. A protective effect on bones has also been discovered, even in the presence of osteoporosis.

These discoveries have been made in the context of the international

BOLERO-2 study, in which experts from the Comprehensive Cancer Centre at the MedUni Vienna, led by Gnant, are involved. The study has demonstrated that Everolimus prevents metastases from spreading to the bones and growing. Everolimus is an mTOR inhibitor with numerous functions in the regulation of cell growth which breaks through hormone resistance in cases of breast cancer.

One in eight women in Austria will develop breast cancer at some stage in their lives, and mortality is relatively low at 20 per cent, thanks to the already high quality of examinations in Austria. Further down the line, breast cancer patients frequently develop bone metastases and very often have problems with their bones.

"Added to this, is the fact that other types of cancer medication can in some cases impair bone stability as an unwanted side effect. Everolimus, however, does precisely the opposite. We are therefore hopeful that the drug will enable us to solve both of these problems at once," says Gnant. The consequence would be a significantly improved quality of life for affected patients with greater mobility, less pain and fewer symptoms.

Possible use in prevention

Studies are now beginning that will investigate the use of Everolimus in the early stage of breast cancer – and not only when breast cancer is already advanced. Says Gnant: "Consideration is being given to using the drug preventatively too." This is because Everolimus works directly on the mTOR signal pathway, where it acts as an mTOR inhibitor, blocking the signal pathway, and not just on one specific organ. Gnant: "This gives rise to the hope that it will also be effective and useful on other signal pathways."

Provided by Medical University of Vienna