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Press release

For immediate publication

World Breast Cancer Day: Blood test for customized therapy Current research update from Med Uni Graz

Graz, 29. September 2021: On World Breast Cancer Day on 1 October, Marija Balic of the Medical University of Graz will provide a research update and explain what role knowledge of the principles of molecular biology plays in selecting the best therapy for patients. The progression of therapy for one variant of breast cancer will be customized using blood tests. At the Comprehensive Cancer Center in Graz, which is operated jointly by University Hospital Graz and Med Uni Graz, Marija Balic is head of the Breast Center, which pools expertise from teaching, research and patient care.

Molecular biology principles as the key to successful treatment

Breast cancer is the most common form of cancer in women in Austria. One in eight women will develop breast cancer over the course of her life. Disease risk rises over time and increases after 40 and especially after 50. Younger women are less often affected, and after the age of 70, disease risk decreases again. Men suffer from breast cancer much less frequently. The ratio of the disease in men to women is 1:100. "Around 5 to 10% of breast cancers are hereditary. It is much more common that other genes or other factors increase the risk of developing breast cancer," explains Marija Balic. Factors such as a lack of physical activity, excess weight, an unhealthy diet and smoking can favor the development of breast cancer. Knowledge of genetic changes and the underlying principles of molecular biology are the key to choosing customized cancer therapy as well as to further developing diagnostic tools for a prognosis or early detection.

Study: Gene inhibition therapy

A current research project at Med Uni Graz under the direction of Marija Balic is concerned with selecting appropriate therapy for patients with metastatic breast cancer. It includes patients with hormone receptor-positive (ER+) tumors. In this form of the disease, tumor growth is dependent on endogenous hormones activating hormone receptors in the tumor cells. "We investigate whether these patients are suitable for combination therapy with a specific active substance (Alpelisib), which has a better effect when an activating mutation occurs in the PIK3CA gene. We screen the patients' blood for these mutations," says Marija Balic.

To determine further treatment steps, blood is drawn from patients and then examined for selected PIK3CA mutations. "With this blood test, it is possible to customize the therapy steps to the disease without having to depend on older tests of the tissue of the primary tumor," explains the expert. At the same time, the share of the genetic material of the tumor in all the genetic material freely circulating in the blood is also measured over the course of therapy to determine whether a patient's therapy has been successful.

Participation in the study is currently possible at the Division of Oncology. Other centers in Graz and Austria will soon be included in the study.

Focus on the genetic makeup of tumors: New study starting soon

Another clinical study under the direction of Marija Balic is starting soon at Med Uni Graz. This study will include patients with metastatic breast cancer whose biology is somewhat different and that have been defined as HER2 positive. They will be treated in combination with one of the newer drugs. "Parallel to the success of treatment, we will also take blood tests in the new study to look at the behavior of the genetic material of the tumor so that we better understand particularly good responses or a lack of response to treatment," says Marija Malic, looking into the near future. This will provide further insight into how to make breast cancer therapy even more targeted in the future. In this study, common drugs should be used in combinations that have not been sufficiently investigated. Patients are included who have already received pretreatment and need new therapy options. Effective therapeutic approaches are combined and a connection is established between the effect and the profile of the genetic makeup of the tumor.

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Profile: Marija Balic

Marija Balic studied medicine at the University of Graz and completed her training to become an internist and internist oncologist at the Medical University of Graz. During her studies, she consolidated her clinical knowledge through several research stays conducted in the U.S. Since 2016 she has been vice-president of the largest academic research group in Austria (Austrian Breast & Colorectal Cancer Study Group ABCSG). Since 2019 she has directed the Breast Center at the Comprehensive Cancer Center in Graz.

About the Comprehensive Cancer Center in Graz

A joint facility of Med Uni Graz and KAGes at University Hospital Graz, the Comprehensive Cancer Center in Graz provides top-level patient care. Offering the most modern diagnosis and treatment options, it provides the highest level of care to people with cancer in Styria.

Specialists work together closely to explore possible reasons for the development of cancer, state-of-the-art early detection measures and new treatment methods in the best interest of patients.