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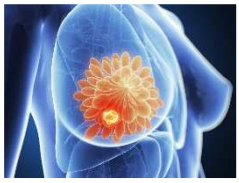
Press release for immediate release

Breast cancer research is progressing and enabling breast clinics to propose a tailor-made treatment for many cancers



Brussels, 5 October 2020 – **Professor Martine Piccart, Director of Scientific Research at the Jules Bordet Institute, details the very real progress that is enabling breast clinics to propose an increasingly personalised treatment plan, coupled with a significant de-escalation of treatment for selected patients.**

"Choosing to be treated at a breast clinic is to opt for the latest treatment and a medical context in which each case is discussing in a collegial way within a multidisciplinary oncology consultation. It is to choose for a method of analysis and calibrated treatment for each type of breast cancer," explains Professor Martine Piccart.

The Mammaprint signature brings major progress in personalising the treatment of hormone-dependent breast cancers that are detected early

A genomic analysis to predict whether or not a patient being treated for a hormone-dependent breast cancer will benefit from chemotherapy administered in addition to hormone therapy. That is the aim of the Mindact study carried out by the EORTC (European Organisation for Research and Treatment of Cancer) and BIG (Breast International Group) from 2009 and for which the Jules Bordet Institute was one of the key recruitment centres in Europe. Research now has nine years follow-up on this study and its latest analyses were presented recently at the ASCO (American Society of Clinical Oncology) congress.

The principle of the Mindact study

Mindact looks at the clinical utility of the Mammaprint prognostic test, a genome test that makes it possible to predict whether adjuvant chemotherapy brings an additional benefit in terms of survival without relapse for women already systematically receiving hormone therapy for their hormone-dependent breast cancer. A cancer that represents three-quarters of current breast cancers.

Real impact for the patients concerned

The Mammaprint signature makes it possible to de-escalate treatment for women aged over 50 without risk. The signature is an expression of genes for hormone-dependent breast cancers and makes it possible to identify women aged over 50 who will not receive any benefits from adding

chemotherapy to their hormone treatment. As such, it represents notable progress in personalising treatment for this patient category.

The results of the Mindact study had already been published in 2016 with a five-year follow-up. This year they were presented at the ASCO congress with a more mature analysis and a nine-year follow-up. This analysis shows that the test is particularly effective after the age of 50 for patients considered by their oncologist to be at high risk of relapse on the basis of clinical criteria but who have a "Mammaprint" gene signature that is considered low risk. The Mindact study shows that the future of these patients, after a follow-up of nine years, is identical with or without chemotherapy.

Among women aged under 50 the Mammaprint signature is informative but omitting chemotherapy can lead to a higher risk of relapse (about 5%).

"This Mindact study is particularly important. Today there are a lot of biomarkers that are received enthusiastically by researchers and doctors, but there are few that have been the subject of such an advanced validation study. The Mindact study is based on more than 6600 women recruited throughout Europe. This represents a considerable effort to show the effectiveness of a biomarker. For many other interesting biomarkers such a large scale demonstration unfortunately does not yet exist."

New targeted medicines for hormone-dependent cancers

In this area too, major strides have been made in terms of patient survival. When the hormone-dependent cancer of a patient recurs, the disease becomes incurable. Recourse is then made to treatment weapons that make it possible to keep the disease in check for a number of years. In this context, it was recently proved that a new category of targeted treatment helps to increase the survival of these patients while presenting limited side effects. These targeted medicines are taken in addition to hormone therapy, are administered orally and are known as "CDK-46 inhibitors". These are medicines that delay the development of resistance to hormone therapy by blocking the signalling pathways that a tumour cell can use to favour its survival.

"There are three such medicines: PALBOCICLIB, RIBOCICLIB and ABEMACICLIB. Clinical research has shown in recent months that this family of medicines not only made it possible to increase patient survival but also quality of life."

Targeted medicines for early-stage HER2 breast cancers

"Another major treatment advance is in terms of HER2-positive breast cancers that represent 15-20% of breast cancers in Belgium. Thanks to the development of medicines that target the Achilles' heel of this cancer, namely the HER2 receptor, it is possible, at an early stage of the disease (no metastases), to propose a highly personalised treatment."

Research has shown that for small tumours without lymph node involvement it is possible to simplify the chemotherapy and limit it to just one chemotherapy drug (Taxol), combined with a targeted therapy, trastuzumab. Thereby avoiding recourse to the kind of much more aggressive treatment that has been practiced for many years.

For larger tumours, the current favoured approach is treatment with medicines prior to surgery. It has been shown that by using two antibodies against the HER receptor in association with chemotherapy, it was possible to obtain a complete remission of the disease (the tumour disappeared) before surgery in 60% of cases.

Finally, for women who do not show total tumour disappearance at the time of surgery and who therefore present a high risk of relapse, it was shown that taking the drug TDM1 after surgery gives them significant protection against relapse with good tolerance to the treatment. TDM1 functions as a Trojan horse. It is trastuzumab to which a highly toxic chemotherapy agent is attached but one that only attacks the tumour cells thanks to the trastuzumab antibody that recognizes the tumour cells as a priority.

"Research also showed this year that other medicines, based on the same principle, obtained spectacular response rates for advanced cancers. Prospects for this pathway are therefore very encouraging."

Immunotherapy against breast cancer, a promising line of research

Immunotherapies are considered interesting in particular for breast cancers that have no receptors, known as "triple negative breast cancers" (no hormone sensors, no HER2 receptors). Triple negative cancers are treated with chemotherapy but when there is a relapse (in 50% of cases) the prognosis is relatively bleak. In this case, immunotherapy shows encouraging results. If immunotherapy is added to chemotherapy better results are achieved but they remain fragile.

"It is probable that for breast cancers further research is needed with combined immunotherapies (combination of different immunotherapies) in addition to chemotherapy. This is a field in which it is vital for research to invest. An interesting avenue is to test combined therapies very early in the treatment, before a relapse, with a curative goal."

The "Alexandra" study

The Jules Bordet Institute is responsible for collecting data from the first major global study that tests chemotherapy combined with immunotherapy, compared to chemotherapy alone, for patients with a triple negative breast cancer and who have been operated on. The Alexandra study, coordinated by BIG, is today at the recruitment stage.

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About the Jules Bordet Institute

An integrated multidisciplinary centre, unique in Belgium, the Jules Bordet Institute is an autonomous hospital devoted exclusively to cancer.

For 80 75 years, the Jules Bordet Institute has been providing its patients with diagnostic and therapeutic strategies at the forefront of progress to prevent, detect and actively combat cancer. The Institute pursues three missions: care, research and teaching. Its international reputation attracts the world's leading cancer experts. Its spirit of innovation has enabled it to participate in the development and discovery of major new methods of diagnosis and treatment with the aim of bringing the findings to the patient as rapidly as possible.

In May 2018, the Jules Bordet Institute received official accreditation and designation from the OECI (Organisation of European Cancer Institutes) as a "Comprehensive Cancer Centre", a quality label reserved for multidisciplinary cancer care institutions whose activities include research and teaching. The only Comprehensive Cancer Center accredited by the OECI in Belgium.

The Jules Bordet Institute is a member of the Iris and Université Libre de Bruxelles hospital networks. With its 160 beds dedicated exclusively to cancer patients, every year the Institute treats more than 6,000 in-patients., 15,000 out-patients and provides 84,000 consultations. To effectively meet future demographic and scientific developments, a new Bordet Insitute is being built on the ULB Anderlecht campus, next to the Erasmus Hospital. Inauguration is scheduled for the end of 2021.

www.bordet.be

About the Friends of the Bordet Institute

For more than 50 years, "The Friends of the Bordet Institute" have been financing research against cancer research at the Jules Bordet Institute, the reference centre in the fight against cancer in Belgium and abroad. As the Institute's biggest private donor, it has given close to 13 million euros to the Institute in the past five years.

Considerable progress has been made in the field of oncology in recent years. Our understanding of the biological origin of cancer is growing all the time. Whereas 10 years ago we spoke of the microscopic analysis of tumours, today we speak of genetic profile, of sequencing, etc. Dozens of new molecules and markers have been developed, permitting the advent of personalised treatment. This progress has to a large extent been made possible through the extraordinary technological progress of recent years. But these new techniques that now enable us to probe the infinitesimally small are increasingly expensive.

For more than 50 years, the help of the "Friends" has enabled the Jules Bordet Institute to pursue its research using the most advanced technologies, thereby providing patients with the most innovative screening and treatment techniques. Techniques that generate life and hope.

By helping and supporting "The Friends of the Bordet Institute" you are participating in the many research programmes that they support and that all pursue a single aim: victory for life.

To find out more about the association The Friends of the Jules Bordet Institute, go to the website www.amis-bordet.be
To find out more about the "101 tables pour la vie", go to the website www.101tables.com