

Press release for immediate release

A patient's immune response makes it possible to personalize treatment of HER2 positive breast cancer

Brussels, 28 of May 2018 - **Researchers at the Jules Bordet Institute published last week, in the Journal of the National Cancer Institute, a study permitting the advance identification, among women suffering from an HER2-positive breast cancer, of those who will and will not respond positively to preoperative chemotherapy in association with two therapies that target the HER2, namely trastuzumab and pertuzumab. This study makes it possible to refine treatment for these patients and opens up new prospects for researchers.**

Dr Michail Ignatiadis, Head of the Medical Oncology Clinic at the Jules Bordet Institute, in cooperation with the JC Heuson Breast Cancer Translational Research Laboratory, headed by Professor Sotiriou, and the Roche-Genentech biomarker team, carried out a translational study on the basis of the Tryphaena clinical trial. The Tryphaena clinical trial studied the effectiveness and tolerance of preoperative chemotherapy in association with two therapies that target HER2 - trastuzumab and pertuzumab - among 225 women suffering from an HER2-positive breast cancer. The study analysed the clinical future of patients treated with preoperative chemotherapy in association with trastuzumab and pertuzumab on the basis of two criteria: the quality of the patient's immune response against the tumour before any treatment and the pathological response to the preoperative treatment at the time of the operation.

The study's objective? To identify, before commencing a preoperative chemotherapy treatment in association with trastuzumab and pertuzumab, the profile of women who will have a favourable clinical future.

The researchers analysed the quality of the immune response of each patient before the treatment. This involved measuring the number of tumour-infiltrating lymphocytes (TILs) entering the initial tumour of an HER2-positive breast cancer, these being biomarkers that will boost the effectiveness of the neoadjuvant treatment (treatment administered before the operation). At a second stage the researchers analysed, in these same patients, the quality of their pathological response to the treatment with preoperative chemotherapy in association with trastuzumab and pertuzumab.

The study shows that when the patient's TIL levels are high and there is a full pathological response to the treatment, meaning that the initial tumour has disappeared totally at the time

of the operation, there is a lower risk of recurrence. The treatment as proposed today is therefore effective and sufficient for these patients. On the other hand, when the TIL level of the patient is low or non-existent and/or the initial tumour has not disappeared totally at the time of the operation, the study shows a high risk of recurrence.

With this study we are moving towards a refining of breast cancer treatments. It concludes that the initial percentage of TILs and the pathological response to the standard preoperative treatment may provide prognostic information that make it possible to identify women for whom neoadjuvant chemotherapy in association with trastuzumab and pertuzumab may not suffice and for whom an intensification of treatment will be considered. This is important information for researchers and clinicians as it may help to target women for whom new combination treatments such as HER2 targeted therapy and immunotherapy will need to be tested.

Study reference: Tumour infiltrating lymphocytes in patients receiving trastuzumab/pertuzumab-based chemotherapy: A TRYPHAENA substudy

Link : <https://academic.oup.com/jnci/advance-article-abstract/doi/10.1093/jnci/djy076/4999669>

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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 more than 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 2013, 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. This is a first for 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, 12,000 out-patients and provides 75,000 consultations. To effectively meet future demographic and scientific developments, the Institute is planning to build a new Institut Bordet on the ULB university campus in Anderlecht, next to the Erasmus Hospital. Inauguration is planned for 2018.

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- Jules Bordet Institute website: www.bordet.be
- To consult the Jules Bordet Institute presentation brochure, go to: <http://www.bordet.be/fr/presentation/brochure/index.html>
- To view the Jules Bordet Institute presentation video, go to: <http://www.bordet.be/fr/presentation/organigr/textes/bordet.htm>

About the Friends of the Bordet Institute

The Friends of the Jules Bordet Institute is a non-profit-making organisation with the sole aim of supporting and financing research at the Jules Bordet Institute, a cancer centre that is a reference in Belgium and abroad. As the largest private donor to the Bordet Institute, "The Friends" have donated almost 12 million euros 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 40 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