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PRESS RELEASE

PHYSICIAN RESEARCHERS FROM GUSTAVE ROUSSY DEMONSTRATE THE VALUE OF HIGH-THROUGHPUT GENOMIC ANALYSES IN CANCER

In a study published on 1 April 2017 in the prestigious journal *Cancer Discovery*, research teams at Gustave Roussy, Inserm and Paris-Sud University demonstrate that analysing the molecular portrait of a malignant tumour makes it possible to identify the appropriate therapy and improve the prognosis of patients with cancer. MOSCATO, the biggest precision medicine study conducted to date, proves it for the first time.

The American Association for Cancer Research (AACR) has also announced the results of this work, carried out by French researchers.

Precision medicine is a different approach to cancer care. The tumour is no longer characterised solely by the organ of origin and stage of development, but also by the nature of the molecular alterations found in its DNA or RNA. Once the molecular portrait has been drawn and the alterations identified, so-called actionable mutations guide the choice of treatment towards the appropriate targeted therapy. Until now, no clinical study had shown any benefit for patients.

Sponsored by Gustave Roussy and supported by the French National Cancer Institute (INCa) under the Integrated Cancer Research Site (SIRIC) programme, and by Inserm and the French Directorate General of Care Provision (DGOS), MOSCATO demonstrates the efficacy of precision medicine for patients for the first time. *“The results from MOSCATO are beyond any doubt, and support the use of genomic analyses for optimising cancer treatments,”* observes Prof. Jean-Charles Soria, Head of the Drug Development Department (DITEP) at Gustave Roussy/Inserm U981/Paris-Sud University, “Identification of Molecular Predictors and New Targets for Cancer Treatment.” He adds, *“In this study, we created cancer gene maps for 843 patients, which meant analysing thousands of genes. In about half of the patients, we found mutations against which it is possible to act. Ultimately, approximately a quarter of the patients were able to receive a targeted therapy, and in 33% of these patients, the targeted therapy slowed the disease.”*

To measure the clinical benefit of the targeted therapy, the patient acted as his/her own control.

Progression-free disease survival of patients receiving standard treatment for their disease was determined first. When the disease was progressing, and the patients were given a targeted therapy, the new progression-free disease survival was measured. A clinical benefit was recorded when progression-free survival from the disease was at least 1.3 times longer on targeted therapy than on standard

treatment. It must be noted that with time and successive treatments, progression-free survival becomes shorter unless a more effective treatment than those given earlier is administered.

This MOSCATO study (for *MOlecular Screening for CAncer Treatment Optimization*) was conducted at Gustave Roussy between November 2011 and March 2016. The 1,035 patients enrolled had different types of cancer, and their disease continued to progress despite treatment. Molecular analyses were performed on tumour biopsies at Gustave Roussy's INCa-designated hospital molecular genetics platform. Results of analyses were discussed by a multidisciplinary committee made up of clinical oncologists, biologists and bioinformatics specialists, in order to decide on treatment. Patients with actionable alterations who could benefit from targeted therapies that already had marketing authorisation were excluded from the study. Most of the targeted therapies that could be offered to patients under MOSCATO had been evaluated in phase I trials (over 60 phase I ongoing clinical trials at Gustave Roussy, mainly at the DITEP).

"Now that we have demonstrated a clinical benefit, we are seeking to quantify it in terms of months of life gained in another study called SAFIR 02, sponsored by UNICANCER. We also want to increase the number of patients who might benefit from precision medicine. This is the objective of MOSCATO 02, in which we will evaluate molecular portraits based on a blood sample and circulating DNA, and also try to find out more about resistance," concludes Prof. Soria.

Source:

Cancer Discovery:

High throughput genomics and clinical outcome in hard to-treat advanced cancers

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/ About Gustave Roussy

Gustave Roussy, the leading cancer control centre in Europe, is a hub of world-class expertise in cancer control entirely dedicated to patients. It brings together 3,000 professionals with roles in care, research and teaching. – www.gustaveroussy.fr

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