MErCuRIC

What Is Colorectal Cancer And How Is It Treated?

Colorectal Cancer (CRC) is any cancer of the large bowel, including colon and rectal cancer. It is a common, and often deadly form of cancer. In Europe, around 450,000 people are diagnosed with CRC every year and approximately 250,000 people die every year from the disease. Age is a risk factor for CRC. Therefore, as the European population ages, the incidence of CRC is likely to rise, resulting in an increasing burden on European healthcare systems. Effective treatments that improve patient survival rates and quality of life in a cost-effective manner are urgently needed.

Treatment of CRC is challenging. Early diagnosis is key to effective cancer treatment. CRC has no visible symptoms until it is far advanced, so that CRC sufferers are often very sick before they are diagnosed, and it may be too late for surgery. Other treatments, such as chemotherapy and radiotherapy, are available but the long-term survival outcome for many CRC patients is very poor. While chemo- and radiotherapy are widely used to treat CRC, many patients do not respond to these routine treatments- thus a "one size fits all" approach is not successful for this disease. While some patients may be cured, many patients do not benefit from therapy, yet may still suffer the unpleasant side effects associated with a particular therapy. Giving patients a therapy that is not effective also means that they lose precious time before a more effective second-line treatment is given.

How will MErCuRIC improve treatment?

- The MErCuRIC consortium will perform a clinical trial of an innovative combination of treatments, which earlier research from the group suggests will be beneficial to a specific group of CRC patients, in particular CRC patients with poor overall outcomes. This "personalised medicine" clinical trial is the first step towards having a new treatment accepted in hospitals.
- MErCuRIC will develop new blood tests to predict whether a particular patient will respond to our innovative treatment regime.
- Additional new blood tests will be used to track the patient's response to treatment. These new tests will reduce the requirement for painful and invasive biopsies of the tumour – a common and unpleasant aspect of current treatments.
- The information and samples collected during the project will be made available for further research.

Key Technology Innovations

The project will develop novel technologies to support the delivery of stratified medicine for CRC. The consortium will develop:

- Pre-clinical models of CRC to support the development of stratified treatments for patients at risk of not responding to treatment.
- A non-invasive diagnostic tool for clinicians to determine the molecular subtype of cancer from patient samples. This will allow clinicians to 'test before they treat' and avoid giving certain treatments to patients who will not respond to them.
- A blood-based biomarker test for human patients to allow the easy and non-invasive continuous assessment of treatment efficacy. DNA from cancer cells in the blood will be analyzed to assess disease progression, reducing the number of invasive biopsies that have to be carried out.

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement No. 602901.
It started in December 2013 and will run for 7 years.

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