Molecular diagnosis and treatment

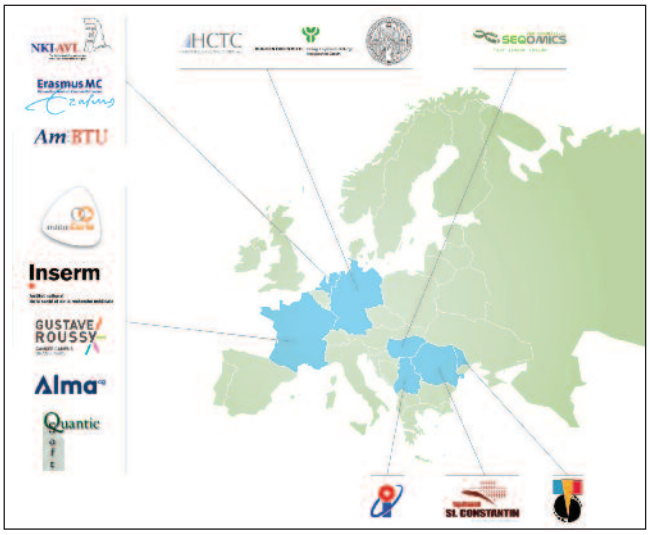
RAIDs is an EU-funded consortium using cervical cancer as a model system for precision medicine diagnostics, therapeutic precision medicine and vaccine development

Cervical cancer (CC) is the second cause of cancer-related deaths in women worldwide, and sexual transmission of the human papilloma virus (HPV) is commonly accepted as its major trigger factor. While preventive anti-HPV vaccination is expected to impact incidence rates more than 20 years from now, when the first vaccinated adolescents will reach the age of peak incidence (35-50) of CC, many women are not vaccinated and remain at risk.

The RAIDs consortium proposes a rational approach towards building intelligent new treatment designs based on the understanding of specific wiring errors in tumour cell signalling. It aims for a comprehensive analysis of the tumour and in parallel studies the impact of tumour cell molecular abnormalities on the tumour micro-environment.

RAIDs aims to design better precision medicine tools as well as to improve therapeutic vaccine strategies against cancer through preclinical and clinical studies. At the core of RAIDs is BioRAIDs, a prospective multi-centre European clinical study with extensive biobanking, allowing for molecular profiling and applying high standards for quality control of biological and clinical data. Genetic mutations (SeqOmics, Hungary), proteomic alteration (a translational platform of Institut Curie (IC), Paris) and their influence on the tumour micro-environment (Netherlands Cancer Institute (NKI), Amsterdam) of cervical cancers in seven EU countries are being analysed.

BioRAIDs is one of the first prospective biobanking trials to date. The main clinical trial support structures are based at the promoter site (IC), with sponsorship delegations to the Hannover Clinical Trial Center, the European Clinical Research Infrastructures Network (Paris) and the NKI. The main challenges towards the initiation of this large clinical study have been: 1) lacking harmonisation in regulatory requirements across Europe, 2) variable levels of experience with a) biobanking and b) clinical trial conduct, and 3) budgetary issues. BioRAIDs is actively including patients today in six EU countries, and real-time analysis is on-going.



Government authorities, parliamentary representatives and health advocates should be aware that the dimension of this public health problem in some EU countries – with only recently established screening practices and virtually no clinical trial experience or infrastructure – requires special attention as regards health statistics, in contrast to richer EU countries with relatively low incidence rates where it represents an orphan disease with little interest by industry and virtually no funding for clinical research.

RAIDs results will be priceless in identifying a set of stratification criteria that will help in the near future to better orient patients towards personalised treatment strategies, as well as to improved vaccine strategies.

Drug sensitivity screenings on CC cell lines already show highly interesting findings that may suggest new alleys for treatment proposals (INSERM, France) as a function of specific molecular alterations. Sophisticated CC animal modelling demonstrated a synergy between a therapeutic HPV vaccine with radiotherapy (Gustave Roussy). A first-in-Man DNA vaccine trial, currently on-going at the NKI, is accruing well. In patients, the evolution of documented tumour genetic changes during the course of treatment is assessed using targeted sequencing in blood (liquid biopsies). SeqOmics plans to develop a molecular profiling platform for patient tumours in neighbouring countries.

Our ambitious RAIDs project was funded by the EU.

RAIDs
Rational molecular Assessment Innovative Drug selection

Suzy Scholl
MD – MRCOG – HDR Co-ordinator of RAIDs
Senior Medical Oncologist at Institut Curie

tel: +33 1 44 32 46 87

suzy.scholl@curie.fr
www.raids-fp7.eu/