Proup 2nd International Conference on <u>n c e s</u> Irranslational & Personalized Medici Conferences Accelerating Scientific Discovery

August 05-07, 2013 Holiday Inn Chicago-North Shore, IL, USA

Can inclusion of genetic polymorphisms improve the prognostic models in colorectal cancer?

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Volorectal cancer is a common malignancy in the developed countries. Commonly used prognostic markers in colorectal cancer are the disease stage and patient age. Present-day efforts are geared towards improving the predictive accuracy of existing prognostic models by including new markers.

In collaboration with the investigators at the Newfoundland Colorectal Cancer Registry, my laboratory is focused on identification of genetic polymorphisms that can predict the risks of recurrence and death in patients. As an example, previously we found that genetic polymorphisms from the serotonin transporter gene (SLC6A4) were predictive of overall and diseasespecific survival times in a colorectal cancer patient cohort. While these results need to be replicated in other cohorts, based on the Akaike Information Criterion we also found that inclusion of the patient genotypes for the SLC6A4 polymorphisms into the prognostic models improved their predictive accuracy. Likewise, by examining two different patient cohorts one of my graduate students identified that the MTHFR Glu429Ala and ERCC5 His46His polymorphisms were associated with overall and diseasefree survivals, respectively. In these cases as well, inclusion of these polymorphisms as variables improved the multivariable models.

These preliminary results should be taken cautiously, yet they also underline the potential gain of information using polymorphisms as prognostic markers in colorectal cancer.

Biography

Sevtap Savas obtained her Ph.D. in Molecular Biology and Genetics in 1999 from the Bogazici University, Turkey. She was trained as a post-doctoral fellow and Research Associate in Louisiana State University (USA), Mount Sinai Hospital Research Institute (Canada) and Princess Margaret Hospital/Ontario Cancer Institute (Canada). Since 2008, she has been an Assistant Professor at Discipline of Genetics, Memorial University of Newfoundland (Canada). Her research program currently focuses on genetic prognostic studies in colorectal cancer using genetic, epidemiological, biostatistical and computational approaches and development of public databases. She also serves as a reviewer, academic editor or editorial board member for several journals.

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