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Genetic polymorphisms and outcome research in cancer: Examples from angiogenesis and metastasis genes and colorectal cancer

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Colorectal cancer is a common disease worldwide. Understanding the biology behind the risk of disease outcomes is cessential for both the clinical management and the development of new therapeutics. For this purpose, genetic variations (e.g. polymorphisms) and their associations with disease outcomes in patients (e.g. as recurrence) are actively investigated in colorectal cancer. Investigating the genetic polymorphisms as variables in outcome research requires a number of considerations, which are not typical of other variables (e.g. stage). For instance, since the effect of a polymorphism on survival outcomes may differ from one genotype to another, using an appropriate genetic model (recessive, dominant, co-dominant or additive) during the statistical analysis is a critical consideration. We previously suggested a way to estimate the best genetic model for individual polymorphisms based on the separation of the Kaplan Meier curves of patient groups with different genotypes. Our team, including the investigators from the Newfoundland Colorectal Cancer Registry (NFCCR), has applied this strategy to 381 polymorphisms in 30 genes from the angiogenesis and metastasis pathways in a cohort of 505 Caucasian colorectal cancer patients recruited to the NFCCR. As a result, we have found several polymorphisms on chromosome 11 as being associated with the risk of death in our patient cohort.

Biography

Sevtap Savas obtained her PhD in Molecular Biology and Genetics in 1999 from the Bogazici University, Turkey. She was trained as a Post-doctoral fellow or 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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