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Investigation for polymorphisms of *caspase 3* and *caspase 9* gene and enzyme levels in leukemia patients

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For understanding of leukemia and its treatment with early diagnosis, the molecular changes that occur during the development of leukemia should be investigated. Apoptosis is central to the development and homeostasis of the hematopoietic system. Previous studies have reported that leukemia cells invariably have abnormalities in one or more apoptotic pathways. The current study investigated the relationship between polymorphisms of *caspase 3* G>T rs4647601 and *caspase 9* A>G rs4645978 and leukemia. Besides that, we aimed to determine *caspase 3* and *caspase 9* enzyme levels possible effects on the risk of developing leukemia. The case group consisted of 100 patients (mean age: 56±03) who had been newly diagnosed with leukemia at the Department of Hematology, Mersin University Faculty of Medicine, Turkey. The control group comprised of 100 healthy properly age and sex matched individuals (mean age: 54±15) with a no history of leukemia. The genotypes were detected by using Real-Time PCR. We measured enzyme levels of *caspase 3* and 9 in serum, which were obtained from blood samples. No significant association was observed between *caspase 3* G>T rs4647601 and *caspase 9* A>G rs4645978 polymorphisms and leukemia. We found that median levels of *caspase 3* and 9 were higher in leukemias than in normal blood cells (P<0.001). This is the first study reporting the detailed distribution of alleles and genotypes of *caspase 3* and *caspase 9* in leukemia patients in Turkish population. Taken together, we conclude that *caspase 3* and *caspase 9* levels may be useful for the early diagnosis of leukemia.

Biography

Nazan Eras, after graduation from Dicle University Faculty of Medicine, worked as a General Practitioner. She completed her MSc in 2006 and PhD in 2012 at Mersin University Faculty of Medicine, Department of Molecular Biology and Genetics. She has been serving as Peer-reviewer in journals. She still continues to work as a Scientist and an Assistant Professor at Mersin University Medical Faculty, Department of Medical Genetics. Her research interests include Clinical Cancer Genetics, Human Molecular Genetics and Oxidative Stress.

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