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miRNAS leading to increase susceptibility of hereditary ovarian cancer

Betul Celik, Gozde Kuru, S Bugra Tuncer, Seda Kılıc, Ozge Sukruoglu, Demet Akdeniz, Mukaddes Avsar, Pınar Saip and Hulya Yazıcı
Istanbul University, Turkey

Statement of the Problem: Approximately 90% of the malignant ovarian tumors are epithelial over cancers,originating from the ovarian surface epithelium. Patients with ovarian cancer are generally diagnosed in advance stagesand the 5-year survival rate is less than 40%. MicroRNAs, a subset of non-coding small RNAs approximately 22 nucleotides, not converting into proteins and single-stranded molecules silence protein expression. Recently, numerous studies have been conducted to determine the structure and function of miRNAs and which types of miRNAs cause the disease. These findings show that miRNAs can be used to diagnose cancer and play an important role in the pathogenesis of tumor. Here in this study, we aimed to show the relation between the miRNA expressions that might be related to the specific regions in the susceptibility of ovarian cancer formation and development of the tumor by using miRNA microarray technology.

Methodology: In the study, the lymphocyte cells of peripheral bloods belonging to the family members which were 3 sisters, 1 brother, 1 niece, 1 daughter of patients and the discordant monozygotic twins for ovarian cancer who applied to cancer genetics clinic at University of Istanbul, Institute of Oncology in 2012 were used. The Agilent miRNA array kit protocol was used to measure expression levels of miRNAs. Multiple tests were used for statistical analysis to detect difference between miRNAs expressions.

Findings: Following statistical analysis among the groups, miRNAs with increasing or decreasing susceptibility level to disease predisposition were identified. After statistical analysis between the groups, a total of statistically significant high expression level of 5 miRNAs were found to be associated with susceptibility to ovarian-cancer. These miRNAs are miR-1273g-3p, miR-1305, miR-3651, miR-6131, miR-92a-3p, respectively. It was determined that 1 miRNA was statistically significant with decreased expression level. This significant decrease was found in miRNA miR-3135b.

Conclusion & Significance: These miRNAs have been found to increase susceptibility by targeting certain molecules and are planned to be correlated with randomly selected patients with healthy groups in the community.

Biography

I love this work beacuse it keeps me motivated intrinsically which is the utmost necessity for success.Research is an organized method that keeps all scientist dissatisfied with what you have discovered and this dissatisfaction is what drives more and mor discovery. For so many years the question: 'How to cure cancer?', which has gone unanswered drives me so ambitious in order to find the answer. I believe that the work conducted our lab may help cancer patients always improve my motivation.

celikbetul6@gmail.com

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