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Study of expression of *AKAP4*, *SPAG9* and *NY-ESO-1* genes as probable diagnosis and prognosis biomarkers in colorectal cancer

Background & Objectives: Colorectal cancer (CRC) is the most common gastrointestinal cancer and the second leading cause of death in women. Cancer-Testis Antigens (CTAs) are a group of tumor-associated proteins which typically are expressed in normal reproductive cells of men, but their expression in normal somatic cells is off. CTAs due to their limited expression pattern, are as promising targets for cancer diagnosis and immuno-therapy.

Methods: We study the expression of *AKAP4, SPAG9* and CTAG1B genes from the CTAs family in both tumor and normal tissues of 62 Iranian CRC patients by RT-PCR with the aim of comparing the genes expression and finding a biomarker for early detection and anticipated progress to CRC. According to studies, *AKAP4* and *NY-ESO*-1 gene expressions in colorectal cancer tissues has not been investigated so far. The *SPAG9* gene expression by RT-PCR was first investigated in Iranian patients. Statistical analysis was performed to assess the association of three studied genes expression and clinical risk factors.

Result: Sperm-associated antigen 9 (*SPAG9*) and A-Kinase Anchoring Protein 4 (*AKAP4*) gene expression respectively were observed in approximately 66% and 44% of tumoral samples but not in adjacent non-cancerous tissues. There was a significant association between AKAP4 gene expression and metastatic samples (P-value: 0.045). CTAG1B (NY-ESO-1) gene was not expressed in our studied patients.

Conclusion: In addition, *AKAP4* and *SPAG9* genes can be a diagnosis biomarkers for CRC and AKAP4 may play an important role in the development and progression of colorectal cancer.

Biography

Bahar Mahjoubi is a Professor of Colorectal Surgery. She has completed her graduation from Sydney University, 2001. Her specific trend is cancer and pelvicfloor diseases. She is the Member of Colorectal Research Center. She has 50 publication. Currently, she is working on project in genetic and stem cell therapy.

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