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TelOmics and cancer evolution

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Abstract

TelOmics, as a cancer network, defines the width spectrum of telomere territory in which the unexpected events may occur. The cells are, usually, surprised by the effective and cooperative manner of telomeres' influential impact which is reflected by statue of health and malady. Telomeres are the initial and final destination at both cellular and molecular levels through which the fate of cells and life would be predicted. Evolution, as an essential event for survival, is actively involved in human life and is required to be unmasked by cancer-TelOmics. Besides, aging and environmental factors affect cancer evolution. Human breast cancer (BC), as a more manageable neoplasm, and human brain tumors (BT) with pitfalls and as a late detectable disease, are reliable candidates for individualized cancer medicine. Telomere length (TL) assay has provided the translatable characteristics within genomic/ somatic level in BC and BT. An early and predictive strategy would be possible for the relatives of the cancer probands through the generation of their pedigrees. Ratio of genomic /somatic TL was 2.669, and 1.4531 in BC- and BT- patients respectively. TL diversity in astrocytoma and meningioma was also remarkable.

The manner of evolution and diversity was remarkable in breast- and brain-tumors, through which a novel hypothesis of TL in both human tumors could be proposed. The course of evolution was based on the heterogenic patterns of TL at genomic and somatic domains. Moreover, protein expression of the key cyclins and the role of growth/proliferation index, has highlighted interactive cellular- molecular targets.

Biography

Parvin Mehdipour has completed her Ph.D at the age of 28 years. She is the professor of Medical Genetics at Department of Medical Genetics, School of medicine, Tehran University of medical Sciences. She has published more than 40 papers in reputed journals, and edited 8 books by national and international publishers and serving as an editorial board member of 8 international journals.