conferenceseries.com

6th Global Summit on CANCER AND ONCOLOGY RESEARCH

May 12-13, 2022 | Webinar

Cell-free circulating DNA (cfcDNA) Methylation Quantification as Diagnostic Biomarker of Pheochromocytomas (PCCs) and Paragangliomas (PGLs)

Fatemeh Khatami

Assistant professor at the Tehran University of Medical Sciences, Iran

Abstract

Introduction: Circulating tumor DNA (ctDNA) is newly diagnostic tumor DNA that can easily represent the genetic and epigenetic change of a tumor. Pheochromocytomas (PCCs) and Paragangliomas (PGLs) are rare tumors of adrenal gland tissue that have the potential to be detected by ctDNA. We aimed to study the potential of the methylation status of RDBP, SDHB and SDHC genes in ctDNA of PCCs/PGLs patients as a diagnostic biomarker.

Materials and Methods: Clinical data and fresh frozen tissue and blood of 12 PCCs/PGLs patients and blood of 12 age/sex-matched normal patients were collected. The methylation status of RDBP, SDHB and SDHC was compared between case and controls by MS-HRM analysis.

Results: Amongst six promoter regions of RDBP, SDHB and SDHC, promoter methylation quantification of SDHCa and RDBPb was significantly different between PCCs/PGLs and controls. SDHCa was methylated in 49.93% of PCCs/PGLs cases vs. 8.33 % of control samples, p-value: 0.026, area under curve AUC=0.757 and RDBPb in 74.9% of PCCs/PGLs cases vs. 25.0% of control samples, p-value: 0.032, AUC=0.750.

Conclusions: This study suggests the ctDNA potential for a less invasive source of tumor epigenetic modification in PCCs/PGLs malignancies. The SDHCa and RDBPb hypermethylation warrant further exploration as diagnostic tools for PCCs/PGL.

Keywords: ctDNA, liquid biopsy, Methylation, SDHCa, RDBPb, Pheochromocytoma, Paraganglioma

Biography:

Fatemeh Khatami an assistant professor at the Tehran University of Medical Sciences. I completed a Ph.D. in Biomedical Sciences at Tehran University of Medical Sciences, Tehran, IRAN, graduating with a GPA of A+. My research area is Biomedical and Molecular Biology, which is the study of biological processes, organisms, or systems to manufacture products, intended to improve the quality of human life. My research is mainly focused on cancer genetics. After graduation, I started working as a faculty member in the Research Deputy of Urology Research Center (URC), Tehran University of Medical Sciences (TUMS).

fatemehkhatami1978@gmail.com