



The Liquid Biopsy: Where a Blood Sample Can Reveal Many Secrets

Georges El Hachem*

Department of Medical Oncology, Institut Jules Bordet, Brussels, Belgium

Editorial

Medical Oncology is one of the most rapidly evolving fields in the Medicine with drastic improvement in the diagnostic and therapeutic procedures. However, the heterogeneity of the disease with a difference between the primary lesion and the disseminated deposits, as well as the response assessment and the early detection of recurrence remain big challenges. Despite the use of effective loco-regional and systemic staging techniques, many cases of small micro-metastatic lesions continue to be undetectable by current imaging procedures, knowing that their early detection may prevent the development of incurable disease. Moreover, there has always been some limitations to biopsy certain lesions that can be molecularly different from the primitive one. Besides, many therapeutic decisions are often based on the characteristics of the primary tumor, without taking into consideration the spatial and temporal tumor heterogeneities. Consequently, the entity of circulating biomarkers, also called liquid biopsy, was developed. It mainly consists of utilizing circulating tumor cells (CTCs) and circulating tumor DNA (ctDNA).

Tumors can liberate cells, called "tumor cells", that enter the blood stream, and become circulating cells with the possibility of analyzing them via different techniques. When the cells become necrotic or after apoptosis, they release their DNA in the blood stream, known as ctDNA. Therefore, they play the role of non-invasive, real-time liquid biopsies in cancer patients, becoming an individual archive for the disease upon progression or regression.

Many trials are ongoing to demonstrate the utility of liquid biopsies in the management of oncologic patients. These are non-invasive, promising, and accurate tools allowing the monitoring of tumor evolution. Many studies showed their potential in detecting early recurrence even before the development of metastatic disease. In the advanced disease, they contributed to the detection of resistance mechanisms to certain cytotoxic treatments. A correlation with the response to treatment and consequently the survival was also demonstrated. So, the liquid biopsies have a prognostic role and may become an effective tool to assess and follow response to treatment, avoiding the continuation of unnecessary regimens, thus resulting in a better orientation of the treatment decisions. What is more interesting is that, in the early setting, the detection of the CTCs and ctDNA after a conventional standard adjuvant therapy may identify a subgroup of patients requiring additional treatments. Further studies are still needed to investigate their role as a surrogate, predictive and sensitive biomarker and to overcome their limitations, mainly the lack of technical standardization.

OPEN ACCESS

*Correspondence:

Georges El Hachem, Department of
Medical Oncology, Institut Jules Bordet,
Brussels, Belgium,
E-mail: george.el.hashem@hotmail.com

Received Date: 04 Jan 2018

Accepted Date: 12 Feb 2018

Published Date: 18 Feb 2018

Citation:

El Hachem G. The Liquid Biopsy:
Where a Blood Sample Can Reveal
Many Secrets. *Clin Oncol.* 2018; 3:
1419.

Copyright © 2018 Georges El
Hachem. This is an open access
article distributed under the Creative
Commons Attribution License, which
permits unrestricted use, distribution,
and reproduction in any medium,
provided the original work is properly
cited.