
The Emerging Role of Liquid Biopsy in Oncology

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The cornerstone of oncology treatment begins with the pathological diagnosis. We need tissue from the growth to have a proper diagnosis, this is achieved by an open or a needle biopsy. The tissue thus obtained is subjected to various studies to help us offer the best treatment to the patient.

We have made reasonable progress in treating even metastatic cancers of several types. The first line therapies are quite effective but many tumors relapse after varying periods of time. We have been repeating biopsies of these recurrences to understand resistance mechanisms. This is now possible due to the rapid advances in molecular biology techniques, the sensitivity of which are ever improving.

The repeat biopsies are no doubt useful but again are invasive and in some instances are not accessible due to their location. This has led researchers to look at this concept of liquid biopsy.

Liquid biopsies are essentially using blood, serum or other body secretions including but not limited to urine, saliva, sputum. Sampling blood seems very attractive as this helps us to overcome the tumor heterogeneity - a shortcoming of limited tumor biopsy. It can also be done serially at various time points to study the tumor progression, response to therapy and to look at genetic changes that could help us to tailor treatment.

It is now an established concept in treating non-small cell lung cancer. The data in several other tumors is promising.