

Liquid biopsies: Are physicians ready to adopt new cancer-detection techniques?

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Video Abstract

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Abstract

Liquid biopsies are poised to revolutionize the way physicians diagnose cancer. The technique allows for the detection of cancer DNA in the blood – without the need for painful retrieval of a tissue sample. But are physicians ready to adopt this new approach? A recent review article explores the exciting opportunities these blood tests offer the field of oncology and takes a closer look at the role pathologists should play in their development. The bottom line? These tests are here to stay, and learning the molecular techniques necessary to utilize them will soon be a necessity for healthcare professionals. Because many tumors shed DNA, it is possible to detect these molecules directly from the bloodstream. Recently, researchers have taken advantage of this discovery to develop an alternative to current tissue-based cancer screening techniques. Liquid biopsies allow physicians to take a blood sample, run diagnostic molecular tests, and rapidly (and reliably) detect the presence of many types of cancers. And the utility of this approach doesn't stop there. Once a diagnosis has been made, these blood tests can be used to monitor the success of a treatment and identify when drug-resistant mutations necessitate alternative therapies. Despite many promising applications, the attitudes of doctors toward liquid biopsies have been mixed. Trepidation on the part of some physicians may be the result of the relatively recent emergence of this method. Maybe the problem is a practical one: who does what and how do they do it? Or, perhaps, it's an unwillingness to abandon tissue biopsies – the current gold-standard for cancer detection. Regardless of the reason, the authors argue, liquid biopsies represent an important addition to the cancer-treatment toolkit and oncologists, biologists, geneticists, and pathologists need to work together to take advantage of this potentially powerful technique. Certainly, further testing is needed and practical, methodological issues must be worked out. But this new approach is gaining popularity as both a stand-alone and complimentary strategy to cancer detection and monitoring. Further refinement of these techniques holds great promise for both patients and healthcare professionals.