

Earlier Detection of Cancers Using Non-Plasma Non-Invasive Tests.

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ABSTRACT

Early detection of cancer provides one of the most effective ways to reduce cancer related morbidity and mortality. Blood based liquid biopsy has provided an opportunity for the development of early detection tests. However, neoplastic conditions are not readily detectable using blood based assays. One of the chief challenges in developing minimally-invasive tests is the identification of the appropriate biofluid and cancer specific biomarkers. Over the past two decades, DNA released from cancer cells has emerged as a specific clinical biomarker of cancer and we have previously developed sensitive methods for detection of this released tumor DNA (rtDNA) and demonstrated its potential applications in variety of clinical samples. We will discuss a test, called PapSEEK, for the sensitive detection of endometrial and ovarian cancer utilizing liquid from the Papanicolau test. Similarly, we have developed a urine test, called UroSEEK, for the detection of bladder cancer in people with hematuria and monitoring for the presence of minimal residual disease after cystoscopy. We will also discuss similar clinical applications in other bodily fluids. Our vision is to develop non-invasive tests for the detection of cancer.