Credentialing liquid biopsies to accelerate drug development and inform medical decisions

Prostate cancer presents unique challenges for liquid biopsy applications due to its low somatic mutation rate, which limits the effectiveness of many circulating free DNA (cfDNA) assays. This makes recurrence detection and disease management particularly difficult. However, liquid biopsies remain a transformative tool for monitoring disease and informing decisions, particularly in patients presenting with high-risk localized and metastatic castration-resistant resistant disease (mCRPC).

This presentation will highlight three key areas where we are exploring the clinical utility of liquid biopsies: First, longitudinal ctDNA analysis assess treatment efficacy while enabling real-time monitoring of the disease for the development of resistance mechanisms and progression in mCRPC. Second, while Circulating Tumor Cell (CTC) enumeration measurements are commonly used in clinical trials in mCRPC, the current response criteria have limited clinical application. To address this, we have developed and validated new CTC response stratification criteria that improve response assessment while providing a measure of tumor burden, a more reliable metric for patient stratification. Third, given the limitations of genomic profiling alone in prostate cancer, we are developing a multiomic MRD assay that integrates genomic and proteomic data to generate a biomarker measure of evaluate the efficacy of a range of treatment modalities in a newly developed ADAPPTIVE trial. Our goal is the clinical validation of liquid biopsy approaches that establish standardized biomarkers for specific context of use, we aim to improve clinical decision making, patient stratification, optimize treatment sequencing, and accelerate drug development for prostate cancer and potentially other malignancies.