ABSTRACT

Alternative biomarkers for HCC surveillance

Amit Singal:

Ultrasound-based surveillance misses over one-half of HCC at an early stage when used alone. AFP is the only biomarker to complete all five phases of biomarker validation. Combination ultrasound and AFP has significantly higher sensitivity than ultrasound alone, albeit with slightly lower specificity, and cost-effectiveness analyses suggest the combination is cost-effective versus ultrasound alone. However, this combination still misses over one-third of HCC at an early stage, underscoring the need for alternative surveillance strategies. Given tumor heterogeneity, there is growing recognition that a single biomarker is likely insufficient and increased interest in biomarker panels.

In this presentation, we will review data from recent phase II and phase III biomarker studies to identify promising biomarker panels. One of the best studied biomarker panels to date is GALAD, which includes gender, age, and 3 biomarkers (AFP-L3, AFP, and DCP). GALAD has been shown to have high sensitivity for early-stage HCC detection in a multi-national nested case-control study, another case-control study among patients with NAFLD, and two small cohort studies among patients with cirrhosis. Outside of protein biomarkers, there have also been interest in liquid biopsy techniques for early HCC detection. Two large phase II biomarker studies recently reported the cfDNA panels including methylated DNA markers could achieve higher sensitivity for early-stage HCC detection than AFP and GALAD, although AFP and GALAD appears to have higher specificity. Large phase III biomarker studies (or similar designs) are currently ongoing for these promising biomarker panels in later stages of development.