

ABSTRACT

Biomarkers for Diagnosis of HCC

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The diagnosis of HCC is based on non-invasive imaging criteria –using LI-RADS– and/or pathology according to guidelines. Pathology can be supported by positive staining of Glypican 3, glutamine synthetase and HSP70. AFP, at a threshold of 400 ng/mL, was previously recommended as diagnostic criteria for HCC, but only a small proportion of early HCCs have such elevated levels and other tumor types (i.e massive liver metastases, cholangiocarcinoma) can confound the diagnosis. Thus, AFP is not considered accurate enough for the diagnosis of HCC. A number of biomarkers, such as DCP and AFP-L3, have been promising for early detection but not for diagnostic purposes. More recently, liquid biopsy using ctDNA, DNA methylation alterations and exosomes have been explored in case-control studies for early detection and diagnosis, but are not yet ready for clinical practice.. ILCA has provided specific guidelines for the development of biomarkers, including the diagnosis of HCC, and endorses a 5 phase approach. These phases extend from biomarker discovery (phase I) to evaluation of biomarker performance (phases II- III) and clinical benefits and harms (phase IV-V). By applying these strategies, it is expected that currently tested liquid biopsy-based cutting edge technologies might change the whole approach to the disease.