

Chairperson(s): **Jeong Min Lee** (Seoul National University Hospital, Korea)
Kyung Sook Shin (Chungnam National University Hospital, Korea)

Modified CEUS LI-RADS for the Diagnosis of Hepatocellular Carcinoma Using Sonazoid

Katsutoshi Sugimoto

Department of Internal Medicine-G-I/Hepatology, Tokyo Medical University, Japan

Hepatocellular carcinoma (HCC) is the only type of cancer diagnosed noninvasively in high-risk patients on the basis of typical imaging features of CT, MRI, or contrast-enhanced ultrasound (CEUS). Among imaging modalities, CEUS has unique advantages over CT and MRI, as it offers pure vascular images, real-time dynamic images, and excellent safety for patients with impaired renal function or allergies to iodine or gadolinium. Recently, to improve the diagnostic accuracy of HCC and to facilitate communication among radiologists and between radiologists and other physicians, the American College of Radiology developed the Contrast-Enhanced Ultrasound Liver Imaging Reporting and Data System (CEUS LI-RADS) as a standardized reporting system for liver nodules in patients at risk for HCC. Unfortunately, although diagnostic performance of both contrast agents for HCC was almost the same, the current version of CEUS LI-RADS (version 2017) is only applicable to “pure blood pool” contrast agents and not to “Kupffer cell” contrast agents. To overcome this inconvenience, some modified versions of CEUS LI-RADS for the diagnosis of HCC using Kupffer cell agents or Sonazoid have been evaluated and proposed [1-4]. This lecture provides an overview of some versions of modified CEUS LI-RADS for the diagnosis of HCC using Sonazoid, their utilities and pitfalls for diagnosing HCC, and our opinions and expectations for next version of CEUS LI-RADS.

References

1. Sugimoto K, Kakegawa T, Takahashi H, Tomita Y, Abe M, Yoshimasu Y, Takeuchi H, Kasai Y, Itoi T. Usefulness of Modified CEUS LI-RADS for the Diagnosis of Hepatocellular Carcinoma Using Sonazoid. *Diagnostics* (Basel). 2020 Oct 15;10(10):828.
2. Takahashi H, Sugimoto K, Kamiyama N, Sakamaki K, Kakegawa T, Wada T, Tomita Y, Abe M, Yoshimasu Y, Takeuchi H, Itoi T. Noninvasive Diagnosis of Hepatocellular Carcinoma on Sonazoid-Enhanced US: Value of the Kupffer Phase. *Diagnostics* (Basel). 2022 Jan 7;12(1):141.
3. Hwang JA, Jeong WK, Kang HJ, Lee ES, Park HJ, Lee JM. Perfluorobutane-enhanced ultrasonography with a Kupffer phase: improved diagnostic sensitivity for hepatocellular carcinoma. *Eur Radiol*. 2022 Dec;32(12):8507-8517.
4. Li L, Zheng W, Wang J, Han J, Guo Z, Hu Y, Li X, Zhou J. Contrast-Enhanced Ultrasound Using Perfluorobutane: Impact of Proposed Modified LI-RADS Criteria on Hepatocellular Carcinoma Detection.