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Intraindividual Comparison Of MRIs With Extracellular And Hepatobiliary Contrast Agents For The Noninvasive Diagnosis Of HCC Using Korean Liver Cancer Association-National Cancer Center 2022

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Background : The aim of the present study was to evaluate the per-lesion sensitivity and specificity of the Korean Liver Cancer Association-National Cancer Center (KLCA-NCC) 2022 criteria for the noninvasive diagnosis of hepatocellular carcinoma (HCC), with intraindividual comparison of the diagnostic performance of magnetic resonance imaging (MRI) with extracellular agents (ECA-MRI) and hepatobiliary agents (HBA-MRI).

Methods : Patients at high risk for HCC who were referred to a tertiary academic institution for hepatic lesions with size ≥ 10 -mm between July 2019 and June 2022 were enrolled. A total of 91 patients (mean age, 58.1 years; 76 men and 15 women) with 118 lesions who underwent both ECA-MRI and HBA-MRI were eligible for final analysis. The per-lesion sensitivities and specificities of the KLCA-NCC 2022 criteria using ECA-MRI and HBA-MRI were compared using McNemar's test.

Results : The 119 lesions were 93 HCCs, 4 non-HCC malignancies, and 21 benign lesions. On HBA-MRI, the "definite" HCC category showed significantly higher sensitivity than ECA-MRI (78.5% vs. 58.1%, $p < 0.001$), with identical specificity (92.0% vs. 92.0%, $p > 0.999$). For "probable" or "definite" HCC categories, there were no differences in the sensitivity (84.9% vs. 84.9%, $p > 0.999$) and specificity (84.0% vs. 84.0%, $p > 0.999$) between ECA-MRI and HBA-MRI.

Conclusions : The "definite" HCC category of the KLCA-NCC 2022 criteria showed higher sensitivity in diagnosing HCC on HBA-MRI compared with ECA-MRI, without compromising specificity. There were no significant differences in the sensitivity and specificity of "probable" or "definite" HCC categories according to ECA-MRI and HBA-MRI.

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