Redefining MRI:
From Image to Insight

ICMRI 2026
THE 14th INTERNATIONAL CONGRESS ON MRI
& 37th ANNUAL SCIENTIFIC MEETING OF KSMRM

AUGUST 27 - 28, 2026
Grand Walkerhill Seoul, Seoul, Korea
https://icmri.ksmrm.org/2026m

**Abdomen 1**

**SY21-4**

# MRI in MASLD-HCC: From Risk Assessment to Prognosis

**Ijin Joo**

Seoul National University Hospital, Korea

MASLD is rapidly becoming a leading cause of HCC worldwide. As the epidemiology of liver cancer shifts from viral hepatitis to metabolic liver disease, new challenges arise in identifying individuals at risk, optimizing surveillance strategies, and predicting clinical outcomes. MRI has evolved beyond a diagnostic tool for focal liver lesions and now plays an increasingly important role throughout the continuum of care for patients with MASLD-HCC.

This lecture will focus on the role of MRI in HCC risk assessment, diagnosis, and prognostication in the setting of MASLD. First, we will discuss how MRI can contribute to identifying patients who may benefit from HCC surveillance. While fibrosis stage remains the strongest determinant of HCC risk, emerging MRI-based biomarkers may provide additional information regarding individual risk stratification. The potential role of MRI in refining surveillance targets beyond conventional fibrosis-based approaches will be reviewed.

Second, the lecture will examine the diagnostic role of MRI in MASLD-related HCC. Hepatobiliary contrast-enhanced MRI offers high sensitivity for early-stage HCC detection and is particularly valuable in patients with steatotic liver disease, where ultrasound surveillance may be suboptimal. Characteristic imaging findings of MASLD-HCC and challenges associated with lesion detection and characterization will be discussed. The clinical implications of abbreviated MRI protocols and evolving surveillance strategies will also be highlighted.

Finally, we will discuss the prognostic role of MRI in patients with MASLD-related HCC. MRI enables simultaneous assessment of both tumor characteristics and the underlying liver disease. In addition to evaluating imaging features associated with tumor aggressiveness, MRI-derived biomarkers of fibrosis, liver function, and body composition may provide complementary prognostic information that influences treatment selection and long-term outcomes. The potential role of integrated imaging biomarkers for personalized risk prediction in MASLD-HCC will also be explored.

By focusing on clinically relevant applications from surveillance candidate selection to outcome prediction, this lecture aims to provide a practical overview of how MRI can support precision management of HCC in the rapidly growing population of patients with MASLD.

*Keywords:* *Metabolic dysfunction-associated steatotic liver disease (MASLD), Hepatocellular carcinoma, Hepatobiliary MRI, HCC surveillance, Imaging biomarkers*