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

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Glioma Imaging for Precision Oncology

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Precision oncology is driving a shift in glioma management from standardized treatment pathways toward more individualized strategies that reflect each tumor's molecular characteristics, spatial heterogeneity, and temporal evolution. As treatment options become increasingly diverse and tumor biology changes throughout the disease course, imaging is expected to play an expanding role beyond conventional diagnosis and response assessment.

This presentation will review how advanced imaging can contribute to precision oncology through spatially resolved and longitudinal characterization of glioma. Imaging-based approaches may help identify biologically distinct and treatment-resistant regions, predict patterns of progression and recurrence, and update patient-specific prognosis during follow-up. Together, these developments highlight the evolving role of imaging in enabling spatially and temporally informed precision oncology for glioma.

Keywords: *Glioma, Precision oncology, Spatial heterogeneity, Longitudinal imaging, Artificial intelligence, Prognostication*