

## Usefulness of [<sup>18</sup>F]FDG-PET kinetic analysis in non-enhancing primary central nervous system lymphoma: Case report

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A 62-year-old woman experienced headache and rapidly progressive left hemiparesis over 2 weeks. Diffusion-weighted and fluid-attenuated inversion recovery MR images of the head showed increased signal intensity in the right basal ganglia, periventricular white matter and the brain stem. Enhancement was not observed on a T1-weighted spin-echo MR image after the administration of a contrast material. An <sup>18</sup>F-fluorodeoxyglucose positron emission tomography ([<sup>18</sup>F]FDG-PET) study with kinetic analysis showed decreased FDG transport and increased hexokinase activity in the lesions compared with the contralateral hemisphere. The diagnosis was made by biopsy of the right caudate head and pathologic specimens were positive for malignant large-cell lymphoma, B-cell phenotype. The patient received high-dose methotrexate with CHOP chemotherapy, and an [<sup>18</sup>F]FDG-PET study with kinetic analysis showed decreased hexokinase activity after the first chemotherapy. Kinetic [<sup>18</sup>F]FDG-PET analysis may be useful to diagnose and monitor the treatment effect in non-enhancing primary central nervous system lymphoma.

**Key words:** glucose transport, hexokinase, magnetic resonance imaging, PET (positron emission tomography), primary central nervous system lymphoma