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MR Perfusion Imaging for Gliomas

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Abstract

Accurate diagnosis and treatment evaluation of patients with gliomas is imperative to make clinical decisions. Multiparametric MR perfusion imaging reveals physiologic features of gliomas that can help classify them according to their histologic and molecular features as well as distinguish them from other neoplastic and nonneoplastic entities. It is also helpful in distinguishing tumor recurrence or progression from radiation necrosis, pseudoprogression, and pseudoresponse, which is difficult with conventional MR imaging. This review provides an update on MR perfusion imaging for the diagnosis and treatment monitoring of patients with gliomas following standard-of-care chemoradiation therapy and other treatment regimens such as immunotherapy.

Keywords: Arterial spin labeling; Brain tumor; Dynamic contrast-enhanced; Dynamic susceptibility contrast; Glioma; Perfusion.