JOURNAL ARTICLE CORRECTED PROOF

Point/counterpoint: The use of perfusion-weighted MRI and amino acid PET for the identification of treatment-related changes

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Lay Summary

Accurately differentiating actual tumor progression from treatment-related changes, such as pseudoprogression or radiation-induced injury, remains one of the most critical diagnostic challenges in neuro-oncology for both primary and secondary brain tumors. Conventional MRI often lacks specificity because it primarily reflects blood-brain barrier disruption rather than viable tumor tissue. Consequently, advanced techniques like perfusion-weighted MRI and amino acid PET have gained significant attention. While perfusion-weighted MRI provides essential insights into blood flow and is widely available, accumulating evidence suggests that amino acid PET can be more reliable in identifying treatment-related changes. Since both modalities offer complementary information, there is an ongoing debate regarding their relative roles and the optimal way to integrate them into clinical practice. Combining these tools aims to provide more reliable diagnoses, ultimately preventing unnecessary interventions and ensuring that true tumor growth is detected as early as possible.