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Clinical Value of Hybrid PET/MR Imaging: Brain Imaging Using PET/MR Imaging

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Abstract

Hybrid PET/MR imaging offers a unique opportunity to acquire MR imaging and PET information during a single imaging session. PET/MR imaging has numerous advantages, including enhanced diagnostic accuracy, improved disease characterization, and better treatment planning and monitoring. It enables the immediate integration of anatomic, functional, and metabolic imaging information, allowing for personalized characterization and monitoring of neurologic diseases. This review presents recent advances in PET/MR imaging and highlights advantages in clinical practice for neuro-oncology, epilepsy, and neurodegenerative disorders. PET/MR imaging provides valuable information about brain tumor metabolism, perfusion, and anatomic features, aiding in accurate delineation, treatment response assessment, and prognostication.

Keywords: Brain tumors; Epilepsy; Hybrid PET/MR imaging; Neurodegenerative dementia; Parkinsonism.

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