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Current Trends in Diagnostic and Therapeutic Imaging of Brain Tumors

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Message from the Guest Editors

Brain tumors encompass a broad range of diagnoses including relatively low-grade lesions, highly aggressive high-grade tumors, and metastases, but a common theme in evaluation and treatment of these tumors is the use of imaging to aid diagnosis, treatment, and patient follow-up. Brain imaging plays a critical role in clinical decision-making, but even the most sophisticated currently available techniques in magnetic resonance imaging (MRI), positron emission tomography (PET), and molecular imaging leave room for improvement. Higher quality imaging is needed to better quantify the scope of disease and to aid decision-making during longitudinal therapy, both of which are currently limited with mainstream clinical techniques. Furthermore, imaging can guide therapy with techniques such as stereotactic radiosurgery, laser ablation, and high-intensity ultrasound.

This issue focuses on reviews of current state-of-the-art imaging techniques for improving care of brain tumor patients. Cutting-edge imaging methods as well as guided therapies such as ultrasound technologies that enhance the blood–brain delivery of key therapeutic agents are within the scope of this Special Issue.

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Special Issue