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Plenary Lecture 2 PL2

## Chronicles of MR Neuroimaging Biomarkers

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Imaging biomarker is an objective indication of medical state of a patient, and it is observed from outside the patient and should be measured accurately and reproducibly. With the development of MRI technology, various MR neuroimaging biomarkers have been used for grade and assessment of brain tumors, cerebral ischemia and neurodegenerative diseases.

Cerebral perfusion is the most widely studied imaging biomarker in glioma grading and treatment monitoring as well as in the evaluation of tissue viability in stroke. DSC and DCE perfusion using Gd contrast provides relatively simple and easy data acquisition and reliable objective imaging parameters. Arterial spin labelling provides absolute quantification of cerebral perfusion without contrast media and it is spotlighted recently after wide use of high field MR system.

Diffusion weighted imaging provides molecular diffusivity in tumors, ischemic tissue and inflammatory conditions. Quantitative parameters such as ADC and FA have been used for assessment of brain tissue.

Recently introduced CEST, EPT will be discussed in this review and finally radiomic approach of CNS disease will be briefly described.

With the development of MR technology, more precise and objective imaging biomarkers will be developed and we should focus on daily changing trends of MR neuroimaging.

Keywords: MRI, Biomarker, Neuroimaging