Multi-Parameter Evaluation of Brain Tumor with a

WWW based Multimedia Database System

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Abstract

Diagnosis of brain tumor has been markedly improved by using magnetic resonance imaging, which can delineate detailed anatomic structures with excellent tissue contrast on T1-, T2-, and proton density-weighted images, and can disclose abnormal enhancement after intravenous administration of Gd-DTPA due to brain-blood-barrier disruption. In this paper, we present our work on computer assisted radiology development with the use of client server Internet gateway and multimedia support to discover the relevant knowledge for brain tumor diagnosis. The developed system described here has provided the methodology to analyze physiological information of the functional image by the modeling technique, which is used to estimate the physiological parameters, such as metabolism rate of glucose, cerebral blood volume (CBV), cerebral blood flow (CBF) and mean transit time (MTT) from functional images. It also has shown the advantage of the proposed system for improving the quality of image diagnosis in medical applications, and it provides the opportunity for the development of human brain function understanding in the long run.