

3T DWIs with Different b-Values in Brain Tumors**김대진, 장기현, 송인찬, 권배주, 한문희**

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목적 : It is known that diffusion-weighted MR imaging (DWI) is helpful in the evaluation of malignancy grading in brain tumor. This study was to evaluate the DWIs with different b-values of various brain tumors in order to determine optimal b-values on 3T MR unit.

대상 및 방법 : On a 3T MR unit, DWIs with b-values of 1,000, 3,000 and 5,000 s/mm² were obtained in 20 patients of pathologically-proven brain tumors (7 metastases, 4 high grade gliomas, 2 lymphomas, 2 low grade gliomas, 2 germinomas, and one each of germinoma, meningioma, hemangioblastoma and central neurocytoma). The overall image quality, contrast between normal brain parenchyma and tumor and signal intensities of solid and cystic components were comparatively evaluated among DWIs with different b-values by visual inspection.

결과 : The overall image quality was best with DWI with b=1,000 s/mm², whereas contrast between normal brain parenchyma and tumor was best with DWI with b=3,000 s/mm². The malignant tumors tended to have higher signal intensity in solid portions than that of benign or low grade tumors, except for meningioma and central neurocytoma; that was the most conspicuous on DWIs with b=3,000 s/mm². Cystic portions were hypointense in all the tumors, regardless of tumor grading.

결론 : DWI with b-value of 3000 s/mm² appears to be more useful than those of other b-values in the evaluation of brain tumors when using 3T MR unit. Further investigation including measurement of ADC values is needed in larger pool of brain tumor patients.