

The Quantitative Diffusion-Tensor Anisotropy of Human Brain Using Fast STEAM DTI

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목적 : To obtain quantitative diffusion-tensor anisotropy information of human cerebral structure using turbo STEAM diffusion-tensor imaging.

대상 및 방법 : Quantitative diffusion anisotropy MR images were obtained in 7 healthy adults using turbo STEAM sequence and a combination of tetrahedral and orthogonal diffusion gradients. Both relative anisotropy(RA) and fractional anisotropy(FA) values were measured in various brain regions. The anisotropy index was then compared with the reported values resulting from EPI-based diffusion tensor imaging.

결과 : Anisotropy maps depicted white matter features not typically seen on conventional MRI images. Anisotropy differences, which were statistically significant, occurred across different WM regions. It is also shown that FA index is higher than RA index.

결론 : The fact that statistically significant differences were found between anisotropy values in different classes of WM suggests that diffusion tensor measurement has a sensitivity to microscopic WM structure and may have clinical implication to identify WM disease.