

The clinical usefulness about the fat saturation method which is effective in 3.0T MRI

Man-Seok Han^{1*}, In-Mo Yang², Jae-Hwan Cho³, Cheol-Soo Park⁴, Jeong-Min Seo⁵

¹Dept. of Radiological Science, Kangwon National University

²Dept. of Biomedical Engineering, Graduate School, Chungnam National University

³Department of International Radiological Science, Hallym University of International Graduate

⁴Department of Radiological Science, Hanlym College

⁵Department of Radiotechnology, Daewon University College

1. Purpose

The sign of the water and fat affects the influence that it is abundant in the MRI examination among the component of the human body. Obtaining the phantom image make by ourselves and trying to analyze the signal intensity and homogeneity that present the way for the optimum fat saturation.

2. Materials and methods

It measure the signal intensity of the ROI set up and calculate the average, the standard deviation, the maximum, the minimum, the range of the clinical image and phantom image with the CHES, SPAIR, STIR, Dixon sequence.

3. Results

SPAIR was analyzed to be the finest in fat saturation, CHES>Dixon>STIR>SPAIR, in the Signal Intensity of the Phantom image. CHES was remarkable reduced the more became far of the central part of image in the fat removal. Dixon was to be the fines in the coefficient of variation, CHES>SPAIR>STIR>Dixon, in homogeneity of the whole image. STIR was fine in the fat saturation and Dixon was the fine in the homogeneity in brain image. Both STIR and Dixon were fine in the fat saturation and homogeneity for C-spine. Both SPAIR and CHES were fine in the fat saturation and both Dixon and STIR were in homogeneity for L-spine.

4. Conclusion

Both SPAIR and STIR were the most excellent of the fat saturation in the phantom image and Dixon was analyzed to be the finest of the homogeneity in the image. STIR was fine of the fat saturation for brain, Dixon was fine of the homogeneity in the clinical examination aimed at patients. Both STIR and Dixon were fine of the fat saturation and homogeneity for C-spine, SPAIR and CHES were for L-spine, Dixon and STIR were for homogeneity.