

Dynamic MR Study On Experimentally Induced Hepatic Dysfunction Using Gd-DTPA and Gd-EOB-DTPA

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목적(Purpose): The purpose of this study was to investigate the clinical utility of the early dynamic MR phase in detection of hepatic dysfunction when extracellular and liver-specific MR agents were involved.

대상 및 방법(Materials and Method): The hepatic injury model was experimentally induced in adult white rabbits(n=4, average weight = 4.0 kg) by CCl₄. Dynamic MR imaging was performed on a 1.5 T scanner (Vision Plus, Siemens) before and up to 150 sec after IV bolus injection of gadopentate dimeglumine(Gd-DTPA, 0.1mmol/kg) and gadolinium-ethoxybenzyl-DTPA(Gd-EOB-DTPA, 0.1 mmol/kg) using turbo FLASH sequence(TR:11msec TE:4.2msec flip angle:70°). The signal intensity over time curves were then plotted using ROI method.

결과(Results): There was no significant difference between the use of two contrast agents in normal rabbit liver. However, the degree of liver enhancement in rabbits of hepatic dysfunction was decreased than normal group. The signal enhancement with Gd-DTPA was less than that with Gd-EOB-DTPA. The average of maximum enhancement was 19.8% with Gd-DTPA and 34.5% with Gd-EOB-DTPA. In addition, Gd-DTPA showed much delayed enhancement compared to Gd-EOB-DTPA in dynamic MR study.

결론(Conclusion): The degree of enhancement and the time course of enhancement in dynamic MR imaging after contrast agent injection can be used as an index of liver function. Dynamic MR imaging with Gd-DTPA and Gd-EOB-DTPA seems to be helpful to diagnosis liver dysfunction such as hepatic cirrhosis.