Oral PO-14 *(16:50-17:00)*

The Characteristics of Liver Enhancement Pattern using a New Macromolecular MR Contrast Agent in VX2 Tumor Model of Rabbits

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목적 : To evaluate the liver enhancement pattern of MR images obtained after administration of manganese phthalocyanine (MnPC), which is a newly developed macromolecular MR contrast agent, in experimentally implanted VX2 tumor of rabbits and compare with Gd-DTPA and Mn-DPDP.

대상 및 방법 : Phthalocyanine (PC) was chelated with paramagnetic ion, Mn. VX2 tumor model was experimentally implanted in the liver of female NewZealand white rabbits (1.5-3.5 kg). The T1/T2 relaxivity of MnPC was measured in 1.5T (64 MHz) MR using 0.1 mmol of MnPC. All MR images were obtained on 1.5T scanner using human extremity coil. The animals were anesthetized with an intramuscular injection of ketamine hydrochloride (35 mg) and xylazine (5mg), and MnPC (0.4 mmol/kg), Gd-DTPA (0.1 mmol/kg) and Mn-DPDP (0.01 mmol/kg) were injected via the ear vein of rabbits. T1-weighted images were obtained with spin-echo (TR/TE=516/14 msec) and fast spoiled gradient echo (FMPSPGR) (TR/TE=80/4msec) pulse sequence. Fast spin-echo (TR/TE= 1200/85msec) was used to obtain the T2-weighted images.

결과 : The relaxivities of MnPC at 1.5 T (64 MHz) were R1=7.28 $mM^{-1}S^{-1}$, R2 = 55.56 $mM^{-1}S^{-1}$, and were higher than the value of Gd-DTPA (R1=4.8$mM^{-1}S^{-1}$, R2=5.2 $mM^{-1}S^{-1}$). The maximum enhancement of MnPC was appeared at 10 minutes after bolus injection. Also this agent had a long imaging window and good rim enhancement pattern compared with small molecular weight agents such as Gd-DTPA and Mn-DPDP. In addition, MnPC was showed the signal intensity decrease of liver parenchyma in fast spin-echo technique.

결론 : Our results suggest MnPC is a liver-specific MR agent and also this agent has the characteristics as T1 and T2 agent.