M-II-15 *(16:50~17:00)*

Reperfusion Hyperemia Demonstrated on Perfusion MRI: It's Relationship with Programmed Cell Death

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목적 : To evaluate the relationship between reperfusion hyperemia in reversible cerebral ischem and the degree of programmed cell death.

대상 및 방법 : We produced the animal models of reversible cerebral ischemia in 10 cats by mean of middle cerebral artery (MCA) occlusion with transorbital approach. MCA was occluded b microvascular clamp for an hour. MR imaging was performed at 0, 1, 2 days after ischemi and reperfusion. Perfusion (PWI) [Contrast enhanced GRE EPI, TR/TE=1500/40, 40 phases, 128 matrix, 12 cm FOV] and diffusion (DWI) [SE EPI, b=0, 500, 1000] weighted images were obtained using Philips Intera 1.5T system. rCBV and ADC maps were calculated wi IDL based postprocessing program. Tissue slices were obtained after the last MR imagin TUNEL, Calbin and Acid-Fuscin staining were done for corresponding slices as MR imagin We investigated the differences of degree of apoptosis in the area of reperfusion hyperemia.

결과 : There were two different areas in the zone of reperfusion hyperemia, DWI reversal zone an DWI irreversible zone. The degree of TUNEL positive cells on high power microscopy w well correlated with the degree of reperfusion hyperemia based on rCBV ratio of the ischem zone comparing to the normal contralateral side. Calbin and Acid-Fuscin staining als showed same relationship as TUNEL staining.

결론 : Reperfusion hyperemia induces various degree of programmed cell death although some are can be seen as normal zone on diffusion weighted MR imaging.