

Poster ME-6

The relationship between biofeedback and the activation of the auditory cortex

유효운, 김경환, 송명성, 정준영, 임동미, 조은미, 박현욱
한국과학기술원 전기전자 공학과, fMRI 연구실

목적 : We aimed to control the sensory input in terms of auditory perception. For this purpose, the direct comparison of the activation at the auditory cortex between the phases of the passive and active listening was carried out.

대상 및 방법 : Using 3 T MRI scanner we had 3 healthy right-handed subjects. As stimulus a tone was generated sinusoidally modulating a 900 Hz tone at 6 Hz. A block design was used for the task paradigm. At the first session, there were three stimuli presentation phases for 12 seconds for each phase alternated with baseline (no sound). In this session subjects should only listen the stimulus sound. At the second session, they were instructed to listen very carefully, means active.

Images were acquired with following technical protocol : TR = 1500 ms, TE =35 ms, 15 slices, 64 x 64 matrix size. Acquired data were analyzed with SPM.

결과 : For the data evaluation, the ROI was defined at first. The primary and secondary auditory cortex was chosen. A simple t-test at the single voxel level was carried out for the contrast stimuli minus baseline task. The analysis at the single subject level with various p-value as threshold shows that significant more voxels were activated during active listening phases than passive listening.

결론 : According to this results, it seems that the biofeedback influenced to the sensory input.
(과학기술부M1-0107-07-0001)