

Poster PE-9

Neuroanatomical Difference between Healthy Volunteers and Depressive Patients during Sexual Stimulation: functional MRI

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목적 :

The purpose of this study is to evaluate the brain centers associated with visual sexual arousal in healthy and depressive males using fMRI.

대상 및 방법 :

Together with ten healthy volunteers (age 21-55: mean 32.5 years), ten depressive males (age 23-51: mean 34.4 years, mean BDI score of 39.6 ± 5.9 , mean HAMD-17 score of 33.5 ± 6.0) with sexual dysfunction underwent fMRI with 1.5T MR scanner (GE Signa Horizon). The fMRI data were obtained from 7 oblique planes using gradient-echo EPI ($\alpha/TR/TE=90^\circ/6000\text{ms}/50\text{ms}$). The visual stimulation paradigm began with a 60sec black screen, a 150sec neutral stimulation with a documentary video film, 30sec black screen, a 150sec sexual stimulation with an erotic video film, and 30sec black screen. The brain activation maps and their quantification were analyzed with the help of SPM99 and FALBA programs. The perceived sexual arousal responses were assessed using a 5-point scale: 1, no change; 2, minimal increase; 3, moderate increase; 4, large increase; and 5, maximal increase.

결과 :

All of 10 healthy volunteers were sexually aroused by visual stimulation, giving a mean score of 3.9 ± 0.8 on the 5-point scale, while the depressive patients showed a mean score of 1.8 ± 0.6 . None of both cases were sexually aroused by the documentary film. In both the depressive subjects and healthy volunteers, the cerebral activation areas induced by sexual stimulation were hypothalamus, anterior cingulate gyrus, medial & middle frontal gyri, inferior & superior temporal gyri, inferior occipital gyrus, postcentral gyrus, cingulate, thalamus, and caudate nucleus. However, the level of activation in depressive patients was significantly less than in healthy volunteers, especially in hypothalamus, thalamus, caudate nucleus, and inferior and superior temporal gyri. Interestingly, the depressive patients showed greater activation than did normal volunteers in the regions of middle and superior frontal gyri. These areas are known as cerebral cortices associated with major depressive disorder.

결론 :

These results demonstrate the functional neuroanatomy of the brain associated with sexual dysfunction in depressive patients.