

Summary

Brain Function and Local Anatomy for SPM Analysis

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The local brain function has been traditionally investigated based on the correlation of dysfunction with sites of brain lesions. The investigation of relationships between brain function and brain anatomy in both normal subjects and cooperative patients is now a reality through the advent of noninvasive brain monitoring techniques such as positron emission tomography using ^{15}O -water and functional magnetic resonance imaging. While the development of those hardwares is taken for granted, it is quite necessary to deal with large amount of image data in a statistically accurate and rapid manner. Statistical parametric mapping (SPM) developed by Friston et al., is a standard

method processing the image data in activation studies and now available world-wide. SPM can analyze multiple brains and display the activated site on the standard brain which is settled on Talairach's atlas in SPM95 and on MNI (Montreal Neurological Institute) template in SPM96 and SPM99. In activation study, it is most important to design the tasks that specifically enable the local brain areas to be active and elucidate the unknown local function. Thus we must realize in detail what has been known and not about local brain function.

Key words: Activation study, SPM, PET, fMRI, MNI template.