アルツハイマー病の性差（Abstract＃SSE16-02）

MRIスタディの結果、アルツハイマー病を発症する男性と女性とで灰白質の減少が有意に異なることが示された

MRI study shows pattern of gray matter loss is significantly different in men and women who develop Alzheimer's disease

アルツハイマー病（AD）に伴う局所脳灰白質体積減少の程度と分布は性別に強く影響されると2012年Radiological Society of North America年次集会で発表された。ADの女性は最初に脳萎縮がより顕著であるが、疾患の進行は男性においてより速かった。研究者らはAlzheimer's Disease Neuroimaging Initiativeに参加した患者109人（男性60人および女性49人[平均年齢77歳]）のデータを解析した。5年間のスタディ期間中に109人の患者いずれもが、健忘型MCIからADへと進行した。ADと診断された時点および診断の12か月前および後に施行されたMR画像を用いて、研究者らは灰白質の変化を図示した脳マップを作製した。脳マップから、男性患者と比較し女性患者ではADの診断前12か月および診断時から灰白質の萎縮が著明であった。脳マップからはまた、疾患進行に伴う脳灰白質体積の減少領域は男性と女性とで異なることも示された。

Full Text

All patients with Alzheimer's disease (AD) lose brain cells, which leads to atrophy of the brain. But the pattern of gray matter loss is significantly different in men and women, according to a study presented at the 2012 annual meeting of the Radiological Society of North America (RSNA).

"We found that the extent and distribution of regional gray matter volume loss in the brain was strongly influenced by gender," said lead researcher Maria Vittoria Spampinato, M.D., associate professor of radiology at the Medical University of South Carolina in Charleston.

"There is a strong interest in using magnetic resonance imaging (MRI) to assess brain atrophy with the purpose of monitoring dementia progression noninvasively and to aid in understanding which factors can influence brain atrophy progression and distribution in the Alzheimer's brain," Dr. Spampinato said.

In the study, Dr. Spampinato and colleagues analyzed data on 109 patients, including 60 men and 49 women (mean age 77), who participated in the Alzheimer's Disease Neuroimaging Initiative (ADNI), a major study that followed hundreds of cognitively healthy individuals and individuals with mild cognitive impairment (MCI) and AD over a period of five years.

During the five-year period, each of the 109 patients progressed from amnestic MCI (in which the patient suffers memory loss but maintains cognitive function) to AD. Using MR images of the patients' brains taken when they were diagnosed with AD and 12 months before and after the diagnosis, the researchers created brain maps that illustrated gray matter changes.

The brain maps revealed that compared to male patients, the women had greater atrophy in gray matter 12 months prior to their AD diagnosis and at the time of their diagnosis. The brain maps also showed that the men and women in the study lost gray matter volume in different areas of the brain as their disease progressed from MCI to AD.

"The female patients in our study initially had more gray matter atrophy than the male patients but over time, the men caught up," Dr. Spampinato said. "In the men, the disease developed more aggressively in a shorter period of time."

Dr. Spampinato said the gender differences in atrophy patterns have important implications for the development of therapies for MCI and AD.

"These differences should be taken into consideration when testing new drugs in clinical trials," she said. "Knowing the difference between the male and female patterns of atrophy will help researchers better decipher a patient's response to drug therapy."

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