

Study evaluates brain lesions of older patients

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Lesions commonly seen on MRI in the brains of older patients may be a sign of potentially more extensive injury to the brain tissue, according to a recent study conducted by researchers at the Duke University Medical Center, in Durham, NC.

According to the study, hyperintense lesions are a common finding on neuroimaging and are associated with aging, medical illness and some invasive medical procedures. “These hyperintensities are seen in most everyone as we age, although they can be more severe in some than others, said Warren Taylor, MD, lead author of the study. “We feel they're important as greater severity of these lesions is associated with a number of conditions including dementia and memory problems, depression, risk of falls, incontinence, and even higher mortality,” he said.

The study consisted of 82 patients age 60 and older who were not depressed and had no history of neurologic illness. Each patient underwent a brain MRI with diffusion tensor imaging (DTI). The volume of white matter lesions and gray matter lesions was measured, and fractional anisotropy was measured in the white matter of frontal regions, the internal capsule, and corpus callosum. In general, increased lesion volumes were associated with lower fractional anisotropy (FA) values; a measure of both the direction and the intensity of water diffusion and is used as a surrogate marker for tissue integrity.

“What we found in the study is that these lesions may just be the visible

sign of more widespread disease in the brain. That is, in people with more severe lesions, even brain areas that appear normal on MRI may also be affected, particularly brain areas involved in reasoning,” said Dr. Taylor. “One theory we've used is that lesion location may distinguish why some people with a lot of these lesions seen on MRI may get depressed or develop memory problems, while others don't have these problems and do fine. The development of depression or dementia may be because a lesion occurred in areas of the brain that help control mood or memory,” he said.

Source: American Roentgen Ray Society

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