IS THE MEASUREMENT OF BRAIN ATROPHY THE MOST SUITABLE SURROGATE MARKER OF MS PROGRESSION? YES

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For progressive form of multiple sclerosis, conventional biomarkers on magnetic resonance imaging (MRI), including the number of new T2-weighted and gadolinium-enhancing lesions, correlated less with clinical disease progression that in relapsing remitting MS (RRMS). Once patient with MS have transitioned to secondary-progressive MS (SPMS), and in patients with primary-progressive MS (PPMS), MRI outcomes that represent irreversible tissue loss need to be utilized. Studies of atrophy progression in clinically stable and untreated MS patients demonstrated that brain volume loss occurs at an accelerated rate compared healthy controls. There are data that suggest that quantification of atrophy of subcortical gray matter structures, including the thalamus, might be more relevant with regard to clinical outcomes than estimating volume of the whole gray matter.

Recent trials have included gray matter atrophy quantification as an outcome measure. Assessment of brain atrophy in trials with different therapeutic agents will be required to understand how it correlates with accumulation of clinical disability.