Model explores how statins alter multiple sclerosis outcomes

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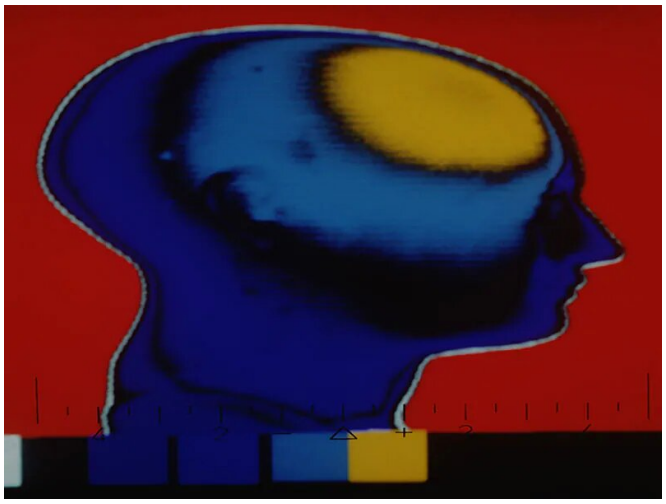

(HealthDay)—Simvastatin's beneficial effects on clinical outcomes and brain atrophy in patients with multiple sclerosis (MS) are largely independent of cholesterol levels, according to a post hoc study published in the May 28 issue of the *Proceedings of the National Academy of Sciences*.

Arman Eshaghi, M.D., from University College London, and colleagues assessed whether the lowering of cholesterol levels plays a role in simvastatin's effects on brain atrophy and disability in secondary progressive multiple sclerosis (SPMS) by applying computational models to the results of the Multiple Sclerosis-Simvastatin Trial. Participants (140 SPMS patients randomly assigned to receive either simvastatin or placebo) underwent brain magnetic resonance imaging at baseline and after one and two years.

The researchers found that when deconstructing the total treatment effect into indirect effects, simvastatin had a direct effect (independent of serum cholesterol) on the Expanded Disability Status Scale (EDSS), which explained 69 percent of the overall treatment effect. Brain atrophy was responsible for 31 percent of the total treatment effect on EDSS (? = ?0.037).

"This suggests that simvastatin's beneficial effects in MS are independent of its effect on lowering peripheral cholesterol levels, implicating a role for upstream intermediate metabolites of the cholesterol synthesis pathway," the authors write.

More information: Abstract/Full Text