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Low vitamin D predicts more severe strokes, poor health post-stroke

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Stroke patients with low vitamin D levels were found to be more likely than those with normal vitamin D levels to suffer severe strokes and have poor health months after stroke, according to research presented at the American Stroke Association's International Stroke Conference 2015.

Low vitamin D has been associated in past studies with neurovascular injury (damage to the major blood vessels supplying the brain, brainstem, and upper spinal cord).

"Many of the people we consider at high risk for developing stroke have low vitamin D levels. Understanding the link between stroke severity and vitamin D status will help us determine if we should treat vitamin D deficiency in these high-risk patients," said Nils Henninger, M.D., senior study author and assistant professor of neurology and psychiatry at University of Massachusetts Medical School in Worchester.

Henninger and colleagues studied whether low blood levels of 25-hydroxyvitamin D, a marker of vitamin D status, is predictive of ischemic stroke severity and poor health after stroke in 96 stroke patients treated between January 2013 and January 2014 at a U.S. hospital.

They found:

- Overall, patients who had low vitamin D levels –defined as less

than 30 nanograms per milliliter (ng/mL) – had about two-times larger areas of dead tissue resulting from obstruction of the blood supply compared to patients with normal vitamin D levels.
- This association was similar among patients who suffered lacunar strokes (in which the small, intricate arteries of the brain are affected) and patients with non-lacunar strokes (such as those caused by carotid disease or by a clot that originated elsewhere in the body).
- For each 10 ng/mL reduction in vitamin D level, the chance for healthy recovery in the three months following stroke decreased by almost half, regardless of the patient's age or initial stroke severity.

"It's too early to draw firm conclusions from our small study, and patients should discuss the need for vitamin D supplementation with their physician," Henninger said. "However, the results do provide the impetus for further rigorous investigations into the association of vitamin D status and stroke severity. If our findings are replicated, the next logical step may be to test whether supplementation can protect patients at high risk for stroke."

Limitations of the study include that most of the participants were Caucasian and the results might not fully translate to other ethnic groups.

More information: "Low vitamin D predicts more severe strokes, poor health post-stroke." *Stroke*. 2008; 39: 2611-2613 DOI: 10.1161/STROKEAHA.107.513655

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