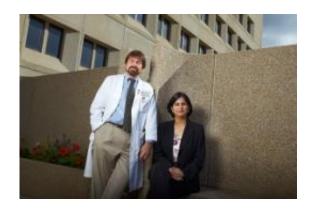


Physicians Explore Link Between Vitamin D Deficiency and Hypertension

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Drs. William White and Pooja Luthra are studying the relationship between vitamin D deficiency and hypertension. Photo by Lanny Nagler

(PhysOrg.com) -- Drs. William White and Pooja Luthra at the University of Connecticut Health Center are investigating a possible link between vitamin D deficiency and high blood pressure.

Vitamin D is known to be important to bone health, but what about heart health?

UConn Health Center physician-scientists are looking into a possible link between <u>vitamin D</u> deficiency and high blood pressure.

"Often patients don't realize they have a <u>vitamin D deficiency</u>, or are unaware of its relationship with health problems other than bone



disorders," says Dr. William B. White, professor of medicine and a hypertension expert in the Pat and Jim Calhoun Cardiology Center. White served as the study's principal investigator.

"Epidemiologic studies have shown an association between measured vitamin D deficiency and increased risk for incident hypertension that is independent of age, body mass index, physical activity, race, and menopausal status," Luthra says. "There is a need for clinical research studies that evaluate the effects of antihypertensive drugs in hypertensive patients with documented vitamin D insufficiency."

"One of the possible mechanisms of elevated blood pressure in patients with vitamin D deficiency is the activation of renin, an enzyme produced in the kidney," White says.

Research involving genomic mouse models found that those with vitamin D deficiency developed elevated production of renin and the protein angiotensin II, leading to hypertension.

In the 14-week, double-blind, randomized trial, participants will first receive either vitamin D replacement or the renin inhibitor aliskiren, then both medications in combination. White and Luthra will assess the corresponding changes in blood pressure both in the office setting and over a 24-hour period using ambulatory blood pressure monitoring, calcium and vitamin D concentrations, and biochemical parameters involving the renin-angiotensin system.



"We have reason to believe there's a connection here, and this research will increase our knowledge regarding vitamin D as a cardiovascular risk factor," White says. "We will try to establish the effects of vitamin D replacement and the impact of direct inhibition of renin in patients with vitamin D deficiency on blood pressure. In the end, we hope that we can spread awareness about the association so that if patients with hypertension ask their doctors, 'What if I have vitamin D deficiency?' then their doctors will be prepared to make informed decisions about what to do about this problem."

The UConn Health Center study is supported by an independent \$480,000 investigator-initiated grant from Novartis Pharmaceuticals, Inc., in East Hanover, N.J., over the next three years.

Provided by University of Connecticut (<u>news</u>: <u>web</u>)

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