



American Heart Association (AHA) 2011 Scientific Sessions

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Vitamin D May Not Have Cardioprotective Benefits

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November 18, 2011 (Orlando, Florida) — Data from a prospective, randomized, placebo-controlled trial has cast real doubt on the alleged cardioprotective benefits of vitamin D. Researchers performing the small study report that treatment with vitamin D for four months had no significant effect on endothelial function, vascular stiffness, or inflammation in healthy postmenopausal women.

"At this point in time, from the standpoint of heart-disease prevention, we have no evidence to prescribe vitamin D to patients, and we have no evidence not to give it," senior investigator **Dr James Stein** (University of Wisconsin School of Medicine and Public Health, Madison, WI) told *heartwire*. "We have other agents that have been proven effective to lower the risk of cardiovascular disease. In the US, with many patients taking the supplement and many physicians prescribing it, some of whom are megadosing it, what we really have going on is a massive, uncontrolled experiment."

The study, led by **Dr Adam Gepner** (University of Wisconsin School of Medicine and Public Health), was presented here this week at the **American Heart Association 2011 Scientific Sessions**. It included 114 postmenopausal women with serum 25-OH vitamin-D concentrations > 10 and < 60 ng/mL. The women were randomized to 2500 IU of vitamin D3 or placebo for four months.

Confirming several previous observational studies, the patients in the study with low levels of vitamin D were more likely to have a multitude of cardiovascular risk factors compared with patients with significantly higher levels at baseline. Stein acknowledged his study has limitations--it was small and only four months long and did not look at hard cardiovascular events--but the group saw no evidence of change across multiple surrogate end points, including endothelial function, arterial stiffness, C-reactive protein (CRP) levels, and blood pressure.

"I am concerned that vitamin D has become the new vitamin C or vitamin E," Stein told *heartwire*. "It has been touted as a panacea for all sorts of conditions, including muscle aches, mood disorders, and fatigue, and is now being used by many physicians as a way to prevent heart disease."

The 20 000-patient **Vitamin D and Omega-3 Trial (VITAL)** study is currently ongoing, but results of the study won't be available until 2016 or 2017. The study, which is led by researchers from the Brigham and Women's Hospital in collaboration with the **National Cancer Institute** and the **National Health, Lung, and Blood Institute**, is a randomized clinical trial investigating whether taking 2000 IU of vitamin D3 daily or 1 g of omega-3 fatty acids reduces the risk of developing cancer, heart disease, and stroke in people who do not have a prior history of these illnesses.

Other vitamin-D studies at the AHA meeting

Other observational, cross-sectional, and retrospective studies presented at the AHA meeting also addressed the vitamin-D issue. In one study, led by **Dr Mahir Karakas** (University of Ulm, Germany), researchers found there was 68% lower risk of coronary heart disease among women with higher levels of vitamin D compared with subjects with lower levels of vitamin D. The data, from 298 patients enrolled in the **MONICA/KORA** cohort study, did not show a reduction in coronary heart disease risk in men. Despite the results, Karakas said that "there is a real vitamin hype going on right now, and we should await the results of the VITAL study" before prescribing vitamin D to patients.

Another study, led by **Dr Jonathan Emberson** (University of Oxford, UK), showed that there was a 17%, 24%, and 21% lower risk of vascular death, nonvascular death, and all-cause mortality in individuals with high serum 25(OH) vitamin D3 compared with subjects with low serum levels enrolled in the **Whitehall** study. When the results of Whitehall were included with other studies in a meta-analysis the group also performed, they observed a 30% reduction in the risk of all-cause mortality among those with high levels of vitamin D. Presenting the results at the AHA meeting, Emberson was cautious in his interpretation of the data, stating that the data do not show causality and that while the association is statistically real, it is nonspecific. While he said that there "could be something real going on here," the results could still be caused by unmeasured residual confounding variables.

And finally, researchers, including lead author **Dr Nikoo Cheraghi** (Children's Mercy Hospitals and Clinics, Kansas City, MO) reported that serum 25(OH) vitamin D3 deficiency was associated with decreased carotid arterial distensibility but not increased intima-media thickness among high-risk children.

To **heartwire**, Stein said that patients often want to believe there is a simple, cheap, and effective vitamin that can reduce their risks, noting that patients with low vitamin-D levels tend to be overweight and sedentary and don't go outside very frequently. For physicians, most generally believe that they are helping their patients when offering it. "There are reasons to believe that it might work, but as physicians we owe it to our patients to stick with drugs that have been proven in randomized, controlled trials," said Stein.