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HIGH DOSE VITAMIN D ASSOCIATED WITH RISK OF ATRIAL FIB

At the November 13-16, 2011 Scientific Sessions of the American Heart Association in Orlando, Florida a report was given about a study of 132,000 patients, average age 52.0±19.4 years, in which Vitamin D measurements were taken. The patients were grouped into Vitamin D categories of <=20 ng/dL, 21-40, 61-80 and >100. Atrial fibrillation (AFib) was diagnosed in small percentages of each category, except the category of >100 ng/dL had twice as many AFib diagnoses than the lower categories. Further studies were suggested to validate this finding.

Authors were Megan B Smith, Utah State Univ, Logan, UT; Heidi T May, Intermountain Medical Ctr, Murray, UT; Tami L Blair, Intermountain Medical Ctr, Logan, UT; Jeffrey L Anderson, Joseph B Muhlstein, Benjamin D Horne, Donald L Lappe, John D Day, Brian G Crandall, Peter Weiss, Jeffrey S Osborn, Thomas Jared Bunch, Intermountain Medical Ctr, Murray, UT;

AHA Session AOS.206.01- Presentation 14699 – Vitamin D Excess is Significantly Associated with Risk of Atrial Fibrillation, Wednesday, Nov. 16, 2011 at 3:45 PM

VITAMIN D AND DECREASE IN MORTALITY

As circulating Vitamin D increases to an optimal concentration of about 87.5 nmol/L this results in a nonlinear decrease in mortality. This conclusion was based on a meta-analysis of 14 studies that involved 62,548 individuals.

Armin Zittermann, Simona Iodice, Stefan Pilz, William B Grant, Vincenzo Bagnardi, and Sara Gandini + Author Affiliations : 1From the Clinic for Thoracic and Cardiovascular Surgery, Heart Centre North Rhine-Westphalia, Ruhr University Bochum, Bad Oeynhausen, Germany (AZ); the Division of Epidemiology and Biostatistics, European Institute of Oncology, Milan, Italy (SI, VB, and SG); the Department of Internal Medicine, Division of Endocrinology and Metabolism, Medical University of Graz, Graz, Austria (SP); the Sunlight, Nutrition, and Health Research Center (SUNARC), San Francisco, CA (WBG); and the Department of Statistics, University of Milano-Bicocca, Milan, Italy (VB).

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VITAMIN D LEVELS LOW IN PATIENTS WITH RECURRENT INFLAMMATORY SPINAL CORD DISEASE

Researchers at Johns Hopkins University[a], University of Texas[b], and Mayo Clinic in Scottsdale[c] checked records of 77 patients with monophasic and recurrent inflammatory diseases of the spinal cord.

The levels of 25-hydroxyvitamin D in these patients are significantly lower, adjusting for season, age, sex, and race. This provides a basis for doing prospective studies on patients' blood levels of 25-hydroxyvitamin D to assess the influence of vitamin D supplementation on the frequency of relapses in those with recurrent inflammatory spinal cord disease.

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SPINAL CORD - *Continued from p. 1...*

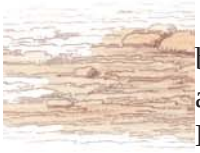
The researchers were Maureen A. Mealy, RN, BSN[a]; Scott Newsome, DO[a]; Benjamin M. Greenberg, MD, MHS[b]; Dean Wingerchuk, MD, MSc[c]; Peter Calabresi, MD[a]; Michael Levy, MD, PhD[a]

Arch Neurol. Published online November 14, 2011. doi:10.1001/archneurol.2011.1974

VITAMIN D MAY IMPROVE BONE HEALTH IN THOSE TAKING ANTI-HIV DRUG

Vitamin D may help prevent hormonal changes that can lead to bone loss among those being treated for HIV with the drug tenofovir, according to the results of a National Institutes of Health network study of adolescents with HIV in a news release issued January 10, 2012. The findings were published online in *Clinical Infectious Diseases*.

Tenofovir is widely used to treat HIV infections. However, the drug causes symptoms that resemble those of vitamin D deficiency ods.od.nih.gov/factsheets/VitaminD-QuickFacts, causing bones to lose calcium and reducing bone density. The study found that large monthly doses of vitamin D reduced blood levels of a hormone that stimulates calcium release from bones.



"What we've found suggests vitamin D could be used to counteract one of the major concerns about using tenofovir to treat HIV," said Rohan Hazra, M.D., of the Pediatric, Adolescent and Maternal AIDS Branch of the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), the NIH institute that funds the networks. "People in their teens and twenties may be on anti-HIV treatment for decades to come, so finding a safe and inexpensive way to protect their long-term bone health would be a major advance."

Vitamin D helps the body absorb calcium to build bones. When the body is deficient in vitamin D, levels of a hormone called parathyroid hormone rise. This rise triggers activity that draws calcium from bones. As a result, the bones become more fragile and can break more easily. Parathyroid hormone also tends to be elevated in people taking tenofovir, whether or not they have sufficient vitamin D.

Because parathyroid hormone levels are elevated in people taking tenofovir in much the same way as they are in people with vitamin D deficiency, the researchers theorized that vitamin D might counteract the bone-depleting effects of tenofovir.

The study was conducted by first author Peter L. Havens, M.D., of the Medical College of Wisconsin and Children's Hospital of Wisconsin, Milwaukee; Dr. Hazra; Kathleen Mulligan, Ph.D., of the University of California at San Francisco; and other researchers affiliated with the Adolescent Medicine Trials Network for HIV/AIDS Interventions (ATN) and the International Maternal–Pediatric–Adolescent AIDS Clinical Trials (IMPAACT) Group.

In addition to funding from NICHD, funding was also provided by the National Center for Research Resources, the National Institute on Drug Abuse, and the National Institute of Mental Health.

About 200 18- to 25-year-olds on antiretroviral therapy took part in the study. Study participants included young adults taking tenofovir and those receiving other forms of anti-HIV treatment. Each month, the adolescents and young adults in the study took a 50,000-unit dose of vitamin D or placebo. At the end of the three months, parathyroid hormone levels had fallen about 14

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ANTI - HIV - *Continued from p. 2...*

percent among participants taking tenofovir and vitamin D but remained unchanged in participants taking other kinds of anti-HIV medication. However, youth taking tenofovir still had higher parathyroid hormone levels than those on other anti-HIV drugs. The researchers don't know if longer treatment with vitamin D would further reduce parathyroid hormone levels.

The recommended daily dose of vitamin D is 600 units. The authors noted that they observed no adverse effects from the vitamin D treatment during the 3 months of this study.

The researchers are now making plans for a two-year follow-up study to examine the longer-term safety of vitamin D in a similar group of HIV-infected youth taking antiretroviral regimens containing tenofovir, and to determine if the changes in parathyroid hormone result in improvements in bone density.

HIGH TESTOSTERONE PRODUCES REDUCED RISK OF CV EVENTS IN ELDERLY MEN

The researchers used gas chromatography/mass spectrometry to analyze baseline levels of testosterone in the prospective population-based MrOS (Osteoporotic Fractures in Men) Sweden study (2,416 men, age 69 to 81 years). Sex hormone–binding globulin (SHBG) was measured by immunoradiometric assay. CV clinical outcomes were obtained from central Swedish registers.

Knowing that low serum testosterone is associated with increased adiposity, an adverse metabolic risk profile, and atherosclerosis and that few prospective studies have demonstrated a protective link between endogenous testosterone and CV events, the researchers decided to study this relationship and the polymorphisms in the SHBG gene that are associated with risk of type 2 diabetes, and SHBG as a predictor of CV events.

During a median 5-year follow-up, 485 CV events occurred. Both total testosterone and SHBG levels were inversely associated with the risk of CV events (trend over quartiles: $p = 0.009$ and $p = 0.012$, respectively). Men in the highest quartile of testosterone (≥550 ng/dl) had a lower risk of CV events compared with men in the 3 lower quartiles (hazard ratio: 0.70, 95% confidence interval: 0.56 to 0.88).

This association remained after adjustment for traditional CV risk factors and was not materially changed in analyses excluding men with known CV disease at baseline (hazard ratio: 0.71, 95% confidence interval: 0.53 to 0.95). In models that included both testosterone and SHBG, testosterone but not SHBG predicted CV risk.

The conclusion of the study is that high serum testosterone predicted a reduced 5-year risk of CV events in elderly men.

The researchers were: Claes Ohlsson, MD, PhD[*], Elizabeth Barrett-Connor, MD[‡], Shalender Bhasin, MD, PhD[§], Eric Orwoll, MD, PhD[‖], Fernand Labrie, MD, PhD[¶], Magnus K. Karlsson, MD, PhD[#], Östen Ljunggren, MD, PhD[**], Liesbeth Vandenput, PharmD, PhD[*], Dan Mellström, MD, PhD[*] and Åsa Tivesten, MD, PhD[†,*]. Reprints: asa.tivesten@medic.gu.se.

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J Am Coll Cardiol, 2011; 58:1674-1681, doi:10.1016/j.jacc.2011.07.019

ZEAXANTHIN HELPS EARLY ATROPHIC MACULAR DEGENERATION

Researchers were: Stuart P. Richer O.D., Ph.D.[a, b], , William Stiles M.D., J.D.[a], Kelly Graham-Hoffman PsyD[a], Marc Levin M.D., J.D.[a], Dennis Ruskin O.D.[c], James Wrobel DPM[b], Dong-Wouk Park[b], Carla Thomas[a] Institutions: a) Captain James A. Lovell Federal Health Care Facility, North Chicago, Illinois; b) Rosalind Franklin University of Medicine and Science, Chicago Medical School, North Chicago, Illinois; and c) Private Practice, Toronto, Canada.

Sixty men (57) and women (3) (74.9 years old, Std Dev 10) were supplemented for one year with the carotenoid zeaxanthin (Zx) to see if it raises macula pigment optical density (MPOD) and has unique visual benefits for patients with early atrophic macular degeneration. The patients were divided into three groups and given 8 mg Zx (n = 25) and 8 mg Zx plus 9 mg lutein (L) (n = 25) or 9 mg L ("Faux Placebo," control group, n = 10). This was a randomized, double-blind, placebo-controlled study of zeaxanthin and visual function in patients with atrophic age-related macular degeneration: The Zeaxanthin and Visual Function Study (ZVF) FDA IND #78, 973

In older male patients with AMD, Zx-induced foveal MPOD elevation mirrored that of L and provided complementary distinct visual benefits by improving foveal cone-based visual parameters, whereas L enhanced those parameters associated with gross detailed rod-based vision, with considerable overlap between the 2 carotenoids. The equally dosed (atypical dietary ratio) Zx plus L group fared worse in terms of raising MPOD, presumably because of duodenal, hepatic-lipoprotein or retinal carotenoid competition. These results make biological sense based on retinal distribution and Zx foveal predominance.

Optometry - Journal of the American Optometric Association, Volume 82, Issue 11, November 2011, Pages 667-680.e6

VACCINE POTENCY -- *Cont'd from p. 26 of NML*

The workshop was organized by NICEATM and ICCVAM and sponsored by the National Institute of Environmental Health Sciences and the National Toxicology Program. It was cosponsored by the European Centre for the Validation of Alternative Methods, the Japanese Center for the Validation of Alternative Methods, and Health Canada, along with the Society of Toxicology.

Information about the workshop can be found on the NICEATM–ICCVAM website at http://iccvam.niehs.nih.gov/meetings/BiologicsWksp-2010/BiologicsWksp.htm. This page also contains a link to the online workshop report, which is available to the public.

Source: 77 *F.R.* 2064-2065, Jan. 13, 2012