Public release date: 5-Dec-2009

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Mayo Clinic

Mayo Clinic and collaborators find vitamin D levels associated with survival in lymphoma patients

ROCHESTER, Minn. — A new study has found that the amount of vitamin D (http://www.mayoclinic.org/news2008-mchi/4904.html) in patients being treated for diffuse large B-cell lymphoma (http://www.mayoclinic.org/non-hodgkins-lymphoma/)was strongly associated with cancer progression and overall survival. The results will be presented at the annual meeting of the American Society of Hematology (http://www.hematology.org/) in New Orleans.

"These are some of the strongest findings yet between vitamin D and cancer outcome," says the study's lead investigator, Matthew Drake, M.D., Ph.D., (http://www.mayoclinic.org/bio/13726218.html) an endocrinologist at Mayo Clinic in Rochester. "While these findings are very provocative, they are preliminary and need to be validated in other studies. However, they raise the issue of whether vitamin D supplementation might aid in treatment for this malignancy, and thus should stimulate much more research."

The researchers' study of 374 newly diagnosed diffuse large B-cell lymphoma patients found that 50 percent had deficient vitamin D levels based on the commonly used clinical value of total serum 25(OH)D less than 25 ng/mL. Patients with deficient vitamin D levels had a 1.5-fold greater risk of disease progression and a twofold greater risk of dying, compared to patients with optimal vitamin D levels after accounting for other patient factors associated with worse outcomes.

The study was conducted by a team of researchers from Mayo Clinic and the University of Iowa. These researchers participate in the University of Iowa/Mayo Clinic Lymphoma Specialized Program of Research Excellence (SPORE), (http://mayoresearch.mayo.edu/mayo/research/hematologic_malignancies/spore_lymphoma.cfm) which is funded by the National Cancer Institute. The 374 patients were enrolled in an epidemiologic study designed to identify predictors of outcomes in lymphoma. Since this was

not a clinical trial, patient management and treatments were not assigned, but rather followed standard of care for clinical practice.

The findings support the growing association between vitamin D and cancer risk and outcomes, and suggest that vitamin D supplements might help even those patients already diagnosed with some forms of cancer, says Dr. Drake. "The exact roles that vitamin D might play in the initiation or progression of cancer is unknown, but we do know that the vitamin plays a role in regulation of cell growth and death, among other processes important in limiting cancer," he says.

The findings also reinforce research in other fields that suggest vitamin D is important to general health, Dr. Drake says. "It is fairly easy to maintain vitamin D levels through inexpensive daily supplements or 15 minutes in the sun three times a week in the summer, so that levels can be stored inside body fat," he says. Many physicians recommend 800-1,200 International Units (IU) daily, he adds.

Vitamin D is a steroid hormone obtained from sunlight and converted by the skin into its active form. It also can come from food (naturally or fortified as in milk) or from supplements. It is known best for its role of increasing the flow of calcium into the blood. Because of that role, vitamin D deficiency has long been known to be a major risk factor for bone loss and bone fractures, particularly in elderly people whose skin is less efficient at converting sunlight into vitamin D. But recent research has found that many people suffer from the deficiency, and investigators are actively looking at whether low vitamin D promotes poorer health in general.

Cancer researchers have discovered that vitamin D regulates a number of genes in various cancers, including prostate, colon and breast cancers. Recent studies have suggested that vitamin D deficiency may play a role in causing certain cancers as well as impacting the outcome once someone is diagnosed with cancer.

Researchers looked at vitamin D levels in lymphoma patients because of the observation, culled from U.S. mortality maps issued by the National Cancer Institute, that both incidence and mortality rates of this cancer increase the farther north a person lives in the United States, where sunlight is limited in the winter. Also, several recent reports have concluded that vitamin D deficiency is associated with poor outcomes in other cancers, including breast, colon and head and neck cancer. This is the first study to look at lymphoma outcome.

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VIDEO ALERT: Additional audio and video resources including excerpts from an interview with Dr. Matthew Drake describing the research are available on the Mayo Clinic News Blog (http://newsblog.mayoclinic.org/2009/12/02/vitamin-d-associated-with-survival-in-lymphoma-patients/). These materials are also subject to embargo, but may be accessed in advance by journalist for incorporation into stories. The password for this post is: drake12.

The study was funded by the National Cancer Institute and the Mayo Hematologic Malignancies Lymphoma Fund.

Other members of the Mayo research team include Ivana Micallef, M.D.; Thomas Habermann, M.D. (http://www.mayoclinic.org/bio/10013571.html) William Macon, M.D.; (http://www.mayoclinic.org/bio/13410423.html), Joseph Colgan, M.D.; (http://www.mayoclinic.org/bio/10187073.html); Matthew Maurer; Cristine Allmer; Susan Slager, Ph.D.; Thomas Witzig, M.D., (http://www.mayoclinic.org/bio/10031316.html) and James Cerhan, M.D., Ph.D. Additional researchers include Brian Link, M.D., and George Weiner, M.D., both from the University of Iowa, Iowa City; Jennifer Kelly, Ph.D., University of Rochester in Rochester, N.Y.; and Daniel Nikcevich, M.D., St. Mary's Duluth Clinic, Duluth, Minn.

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