Cranberry Health News

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In This Issue

National Cranberry – UTI Research Initiative Update

In 2003, the National Center for Complementary and Alternative Medicine (NCCAM) launched a $2.6 million research initiative to fund basic and clinical research on cranberry's ability to prevent and treat UTIs, as well as other conditions for which there exists credible evidence of efficacy.

Such a high level of funding underscores the level of importance that NCCAM attributes to this research, and may well shape healthcare practice in many settings.

This spring, NCCAM announced the research studies funded via this initiative:

- Anderson, G. University of Washington, Dept. of Pharmacy. "Cranberry: Interactions with Anti-infectious Agents"
- Barbosa-Cesnik, C. University of Michigan at Ann Arbor, Dept. of Epidemiology. "Cranberry Juice and Urinary Tract Infections"
- Gupta, K. Yale University, Dept. of Internal Medicine. "Cranberry and Prevention of UTI A Comprehensive Approach"
- Holtgren, S. Washington University, Dept. of Molecular Microbiology. "Effect of Cranberry Constituents on UTI Pathogenesis"
- Stothers, L. University of British Columbia. "Dose-response of cranberry in women with recurrent UTIs"
- Wing, D. University of California Irvine, Dept. of Obstetrics and Gynecology. "Cranberry for Prevention of Bacteriuria in Pregnancy"
- Howell, A. Rutgers University, Center for Blueberry and Cranberry Research. "Identification of Bioactive Cranberry Metabolites"
- Koo, H. University of Rochester, Eastman School of Dentistry. "Influence of Cranberry on Plaque-Related Diseases"
- Donovan, J. Medical University of South Carolina, Dept. of Psychiatry and Behavioral Science. "Drug Interactions and Bioavailability of Cranberry"
- Turner, A. University of Illinois at Chicago, Dept. of Pharmaceutical Science. "Vaccinium macrocarpon compounds as E.coli antiadherents"

To view abstracts for these studies, visit NCCAM's searchable database at http://crisp.cit.nih.gov. Type in "cranberry" as your search term. The Cranberry Institute applauds NCCAM for spearheading this major new initiative and thanks all the researchers who submitted grant applications to NCCAM.

Literature on Cranberry & UTI Benefits Grows

A review article in the May 15, 2004 issue of *Clinical Infectious Diseases* offers the latest confirmation that drinking cranberry juice on a regular basis may help prevent urinary tract infections (UTIs).

The article focused on cranberry's ability to keep infection-causing bacteria from adhering to the lining of the urinary tract and noted that cranberry has been the subject of clinical study since 1966 in association with urinary tract infections and bacteriuria (the existence of bacteria in the urine).

The review noted that the group most likely to reap benefits from regular doses of cranberry juice or tablets is sexually active adult women with recurring UTIs, who may experience a 50 percent drop in infection rates according to some findings.

The review article's authors call for more controlled clinical studies of cranberries' effect on UTI, using different population groups, different dosages, and comparison between product forms.

Antibiotic Medications Update – Current and Emerging Concerns

Healthcare professionals have long expressed concern regarding antibiotic resistance, as a result of increasing reliance, over-prescription and patient misuse. Now, research shows a potential link between a lifetime of antibiotic usage in women and incidence of breast cancer. Breast cancer is the second leading cause of cancer deaths among women in the United States, according to American Cancer Society statistics.

With this new concern on the horizon, *Cranberry Health News* offers this review of various current and emerging issues relating to the prescription and consumption of antibiotic drugs.

Breast Cancer Link: Research from the University of Washington, Fred Hutchinson Cancer Center, Group Health Cooperative (all in Seattle, Washington) and the National Cancer Institute found that the more antibiotics the women in the study used, the higher the risk of breast cancer.

Women who took antibiotics for more than 500 days (over 25 prescriptions) exhibited twice the risk, while women with between one and 25 prescriptions had about 1.5 times the risk. The authors found an increased risk in all classes of antibiotics used.

The study compared the antibiotic use of women with breast cancer to similar numbers of women without breast cancer, for a total of more than 10,000 women. Study participants were all aged 20 or older and enrolled in the Group Health healthcare plan between 1993 and 2001. The study appeared in the February 2004 issue of the *Journal of the American Medical Association (JAMA),*[1] and offers findings consistent with an earlier Finnish study of almost 10,000 women.

It is important to note that the study does not prove that antibiotics *cause* breast cancer. Perhaps women with frequent antibiotic usage also experience hormonal imbalances that might be an underlying cause for their cancer. Perhaps women who do not need frequent antibiotics face less incidence of breast cancer because they are healthier in general.

Other explanations include how bacteria can affect the intestine, which may impact how cancer-preventative foods are broken down; antibiotics' effect on immune system response and response to inflammation, which may lead to cancer development; or that women with frequent antibiotic usage have a weakened immune system response prior to the antibiotic intake.

However, if antibiotic intake plays a role in causing cancer, then reducing antibiotic usage when not necessary for acute care may similarly play a role in decreasing breast cancer incidence. Reducing the need to prescribe antibiotics for urinary tract infections (UTIs) would significantly decrease the number of antibiotics taken by women in the United States.

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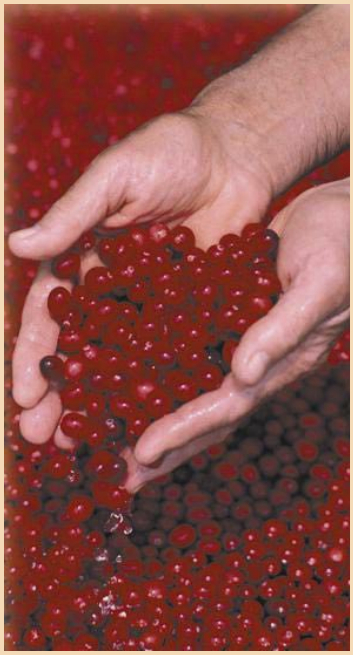

Antibiotic Medications Update Continued

UTIs are the number two cause of antibiotic prescription according to the National Women's Health Resource Center.

While many more studies are necessary on this topic, the link between breast cancer and antibiotic usage may indicate one more significant reason to encourage women to consume cranberry. The role of cranberry in preventing UTIs by blocking bacteria from adhering to the cell walls is well-documented. Please visit http://www.cranberryinstitute.org/health/bibliography.htm for a complete bibliography.

Antibiotic Resistant Strains: Antibiotic resistance has increased dramatically in part due to patient misuses, including stockpiling, stopping a course of antibiotics early or taking antibiotics unnecessarily, such as for a common cold. Healthcare professionals also carry a responsibility to prescribe antibiotics appropriately: According to the Centers for Disease Control and Prevention, tens of millions of antibiotics are prescribed for viral infections that are not treatable with antibiotics, a phenomenon which contributes to the growth of antibiotic resistance.

The Institute of Medicine, part of the National Academy of Sciences, estimates that the annual cost of treating antibiotic resistant infections in the United States now totals over $30 billion.

In addition to helping prevent infections that would require a course of antibiotics for treatment, cranberry also has shown itself similarly effective against certain key antibiotic resistant and non-antibiotic resistant strains of bacteria. In a study conducted by Dr. Amy Howell of Rutgers University, published in *JAMA* in 2002,[2] urine was collected from women who drank 250 mL (8.5 fluid ounces) of cranberry juice cocktail and it was estimated that cranberry prevented the growth of 79 percent of the 24 antibiotic resistant strains tested. This benefit was noticeable two hours after cranberry intake and lasted up to ten hours.

Help for Women Who Do Not Seek Treatment: In a study commissioned by the National Women's Health Resource Center, it was estimated that approximately one-third of the 400 women surveyed (all of whom had previously experienced a UTI) did not seek medical attention for a UTI. To the extent that this is projectable, the ability of cranberry to promote urinary tract health and help prevent infection from occurring in the first place is particularly relevant.

Encouraging patients and clients to consume cranberry as a method of UTI prevention clearly has a beneficial effect in helping them avoid the pain and inconvenience of UTIs as well as adding a highly nutritious, antioxidant-rich fruit to the diet. With new areas of inquiry surrounding the harmful effects of excessive antibiotic usage, cranberry's benefits may prove even stronger in the future.

References for Antibiotic Medications Update

[1] JAMA (Vol. 291, No. 7: 827-835)
[2] JAMA (Vol. 287, No. 23: 3082-3083)

Calendar of Events

American College For Advancement in Medicine: **Spring Conference,** May 19-23, 2004, Orlando, FL. For more information, visit www.acam.org

International Congress of Dietetics, May 28-31, 2004, Chicago, IL. For more information, visit www.eatright.org/Public/ConferencesAndEvents/96_13138.cfm

American Aging Association 2004 Annual Conference: *Molecular Mechanisms of Aging,* ***June 4-7, 2004, St. Petersburg, FL. For more information, visit www.americanaging.org***

American Dietetic Association 2004 Food & Nutrition Conference & Expo, October 2-5, 2004, Anaheim, CA. For more information, visit www.eatright.org/Public/ConferencesAndEvents/96_18095.cfm

Cranberry Industry Funds New Research

The Cranberry Institute is pleased to announce that two regional organizations of cranberry growers committed in April 2004 to fund over $150,000 in new health research. Sincere thanks to the Wisconsin Cranberry Board (WCB) and Canadian Cranberry Grower Coalition (CCGC) for their generosity and to the researchers for submitting high quality proposals.

WCB Funded Research:

- Gross, HB. University of California at Davis. "Cardio-Protective Effects of Chronic Consumption of Dried Cranberries in Human Subjects."
- Neto, C. University of Massachusetts at Dartmouth. "Do Cranberries Reduce the Progression and Severity of Atherosclerosis?"
- Diarra, MS. Pacific Agri-Food Research Center (British Columbia, Canada). "Effect of Cranberry on Polymorphonuclear Function and Epithelial Cell Colonization by S. *aureus* and E. *coli*" (first year of two-year study).
- Grenier, D. Laval University (Canada). "Potential for Oral Health Benefits from Cranberry Constituents."

CCGC Funded Research:

- Diarra, MS. Pacific Agri-Food Research Center. "Effect of Cranberry on Polymorphonuclear Function and Epithelial Cell Colonization by S. *aureus* and E. *coli*" (second year of two-year study).
- Neto, C. University of Massachusetts at Dartmouth. "Cranberries and Cancer: Do Cranberry Phytochemicals Promote Apoptosis in Breast and Prostate Tumors?"

Heart Health Update: Cranberry May Boost "Good" Cholesterol

Cranberry juice may combat heart disease by raising levels of high density lipoprotein (HDL) cholesterol – commonly referred to as the "good" cholesterol because it protects against heart disease – as well as antioxidants, according to research presented at the American Chemical Society's annual meeting in April 2004. The study, authored by Dr. Joseph Vinson from the University of Scranton in Pennsylvania, suggests that drinking three glasses of cranberry juice a day could reduce heart disease risk by 40 percent.

During the study, 19 volunteers with high cholesterol were given between one and three glasses of juice a day over a period of three months. Dr. Vinson found that three servings appeared to increase levels of (HDL) cholesterol by an average of 10 percent, an increase that the researcher believes to correspond to a reduction in heart disease risk of about 40 percent based on known epidemiological data. At the same time, the study found that the amount of antioxidants available to the body increased by up to 121 percent after two or three glasses of cranberry juice a day. Next, Dr. Vinson plans to test the effect of cranberry juice on volunteers with normal cholesterol levels.