

Vitamin C in the News

Issue #3 September 2011

The Vitamin C Foundation monitors research and news reports from around the world concerning vitamin C - ascorbic acid. We have been surprised by the increasing frequency of recent positive reports. The links to the following sample of these reports can be found from our main web page, vitaminCFoundation.org

1. Vitamin C Rapidly Improves Emotional State of Acutely Hospitalized Patients

In a double-blind clinical trial, patients admitted to the Montreal's Jewish General Hospital were randomly assigned to receive either vitamin C or vitamin D supplements for seven to ten days. Patients administered vitamin C had a rapid and statistically and clinically significant improvement in mood state. Their results were published recently in the journal Nutrition.

Full story:

<http://www.sciencedaily.com/releases/2010/09/100923125123.htm>

2. Vitamin K3 and vitamin C Alone or in Combination Induced Apoptosis in Leukemia Cells by a Similar Oxidative Stress Signaling Mechanism

It is shown that vitamin K3- or vitamin C- induced apoptosis in leukemia cells by oxidative stress mechanism involving superoxide anion radical and hydrogen peroxide generation, activation of the transcription factors NF-B, p53, c-Jun, the protease caspase-3 activation and mitochondria depolarization leading to nuclei fragmentation.

Cell death was more prominent when Jurkat and K562 cells are exposed to VC and VK3 in a ratio 1000:1 (10 mM: 10 microM) or 100:1 (300 microM: 3 microM), respectively.

Conclusion: We provide for the first time in vitro evidence supporting a causative role for oxidative stress in VK3- and VC-induced apoptosis in Jurkat and K562 cells in a domino-like mechanism. Altogether these data suggest that VK3 and VC should be useful in the treatment of leukemia.

Author: Angelica Bonila-PorrasMarlene Jimenez-Del-RioCarlos Velez-Pardo

Credits/Source: Cancer Cell International 2011, 11:19 .

Full story:

http://7thspace.com/headlines/385809/vitamin_k3_and_vitamin_c_alone_or_in_combination_induced_apoptosis_in_leukemia_cells_by_a_similar_oxidative_stress_signalling_mechanism.html

3. Mayo Clinic to study Vitamin C and K3 “Drug” for Cancer

Researchers from the Mayo Clinic will conduct pre-clinical and potentially clinical research to

study the usage of Apatone(R), a proprietary combination of Vitamin-C and Vitamin-K3.

Originally developed to supplement cancer treatment, the first clinical trial of Apatone began in 2005 to evaluate the drug in prostate cancer patients. The conclusion of the trial demonstrated promising results by showing delays in the biochemical progression in end-stage prostate cancer patients, which demonstrated the safety and efficacy of orally administered Apatone. Currently, Apatone is being studied in laboratory research as well as clinical trials for a variety of diseases that have inflammation as a significant component.

Full story: <http://www.marketwatch.com/story/summa-health-system-mayo-clinic-and-ic-medtech-sign-collaborative-research-agreement-2011-09-02>

4. New Function of Vitamin C: Treating Alzheimer's Disease

"When we treated brain tissue from mice suffering from Alzheimer's disease with vitamin C, we could see that the toxic protein aggregates were dissolved. Our results show a previously unknown model for how vitamin C affects the amyloid plaques", says Katrin Mani, reader in Molecular Medicine at Lund University.

Full story:

<http://www.news-medical.net/news/20110818/Vitamin-C-shows-promise-against-Alzheimers-disease.aspx>

5. New Cancer Imaging Technique Uses Vitamin C to Detect More Aggressive Tumors

CANCER RESEARCH UK scientists have developed a new imaging technique that uses vitamin C to detect cancers likely to be more aggressive or resistant to treatment, according to a study published in the Journal of the American Chemical Society today.*

The most aggressive cancers are those which are able to divide rapidly without levels of oxidative stress – a process which leads to destructive molecules called free radicals building up in the cell and causing DNA damage – becoming high enough to trigger cell death.

Full story:

http://www.pharmiweb.com/pressreleases/pressrel.asp?ROW_ID=45023

6. Vitamin C Strengthens Brain and Eye Function

We found that cells in the retina need to be bathed' in relatively high doses of vitamin C, inside and out, to function properly, said Henrique von Gersdorff, Ph.D., a senior scientist at [Oregon Health and Science University's Vollum Institute](#) and a co-author of the study.

Full story:

http://articles.timesofindia.indiatimes.com/2011-07-16/health/29781172_1_receptors-cells-brain-act

7. Low Vitamin C Linked to Cataract

*In Low levels of vitamin C were linked to increased incidence of cataract in a vitamin-depleted population in India. Researchers from Aravind Eye Hospital Pondicherry conducted a population-based cross-sectional analytic study to examine the association between vitamin C and cataract in 5,638 people 60 years of age or older. **The tests and analyses revealed vitamin C was significantly inversely associated with cataract**, while lutein, zeaxanthin, retinol, .-carotene, and .-tocopherol were linked to a much smaller effect on cataract. On type of cataract (nuclear, posterior subcapsular or cortical), vitamin C had a similar inverse association, while the other antioxidants had no significantly observable association.*

Full story:

<http://www.naturalproductsinsider.com/s.aspx?exp=1&u=http%3A//www.naturalproductsinsider.com/news/2011/06/low-vitamin-c-linked-to-cataract.aspx>

8. Efficacy of Vitamin C Vaginal Tablets in the Treatment of Bacterial Vaginosis: a Randomised, Double Blind, Placebo Controlled Clinical Trial.

Both Vit. C and placebo were well tolerated and no differences in safety profile were evident between groups. The results support an effective and safe use of silicon-coated Vit. C vaginal tablets in the management of BV. Nutrition.

Full story:

<http://www.ncbi.nlm.nih.gov/m/pubmed/21650086/?i=38&from=vitamin%20c>

9. 2011: Study Finds Significantly Lower Risk of Diabetes was Associated with use of Vitamin C Supplements.

We prospectively examined supplemental use of multivitamins and individual vitamins and minerals assessed in 1995-1996 in relation to self-reported diabetes diagnosed after 2000 among 232,007 participants in the National Institutes of Health-American Association of Retired Persons Diet and Health Study. Multivitamin use was assessed by a food-frequency questionnaire at baseline. Odds ratios (ORs) and 95% CIs were calculated by logistic regression models, adjusted for potential confounders. In total, 14,130 cases of diabetes diagnosed after 2000 were included in the analysis.

Results: Significantly lower risk of diabetes was associated with the use of vitamin C or calcium supplements. Nutrition.

Full story:

<http://www.ncbi.nlm.nih.gov/pubmed/20978095>

10. Plasma vitamin C Concentrations Predict 42% Lower Risk of Incident Stroke over 10 Years

Over 196,713 total person-years (average follow-up: 9.5 y), 448 incident strokes occurred. In a Cox proportional hazards model, persons in the top quartiles of baseline plasma vitamin C concentrations had a 42% lower risk (relative risk: 0.58; 95% CI: 0.43, 0.78) than did those in the bottom quartile, independently of age, sex, smoking, body mass index, systolic blood pressure, cholesterol, physical activity, prevalent diabetes and myocardial infarction, social class, alcohol consumption, and any supplement use. Similar results were obtained after exclusion of persons with illnesses, users of ascorbic acid-containing supplements, and persons with a history of early strokes during the initial 2 y

of follow-up. .

Full story:

<http://www.ncbi.nlm.nih.gov/pubmed/18175738>

11. Liquid Chromatography Reveals Vitamin C Deficiency Common in Dialysis Patients

In Using high-performance liquid chromatography, the team discovered that vitamin C deficiency was present in just under a third of those studied and insufficiency in almost 31 per cent.

They also found that plasma vitamin C level was inversely associated with log10hsCRP and positively linked with prealbumin levels.

"The investigation indicates that vitamin C deficiency is common in both MHD patients and CAPD patients," the team stated.

Full story:

http://www.chromatographytoday.com/news/hplc-uhplc-lc-ms/31/breaking_news/liquid_chromatography_reveals_relationship_of_vitamin_c_in_dialysis_patients/15134/

12. Intravenous Ascorbic Acid to Prevent and Treat Cancer-associated Sepsis?

In AA administered intravenously has a long and controversial history in relation to reducing tumors in patients. This has impeded research into other potential benefits of this therapy in cancer patients such as reduction of inflammation, improvement of quality of life, and reduction of SIRS initiation and progression to MOF. While ongoing clinical trials of i.v. AA for cancer may or may not meet the bar to grant this modality a place amongst the recognized chemotherapeutic agents, it is critical

that we collect as much biological data as possible, given the possibility of this agent to be a wonderful adjuvant therapy.

Full story:

<http://www.translational-medicine.com/content/pdf/1479-5876-9-25.pdf>

Compiled by Owen Fonorow

The Vitamin C Foundation

vitaminCFoundation.org