



ANTIOXIDANTS & CANCER CARE

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Many oncologists and radiation oncologists advise against the use of antioxidants during concomitant cancer therapy. Interestingly, this is despite the common use of amifostine and dexrazoxane, which are two prescription antioxidants marketed to this group of physicians by their pharmaceutical manufacturers.

The National Library of Medicine at the National Institute of Health offers much medical literature on this topic. A comprehensive review of the medical literature provides overwhelming support to systemic use of antioxidants during cancer therapy.

Although iS CLINICAL® products are topical only, these reviews are of interest as they document that antioxidant use during cancer therapies, even if highly absorbed, is beneficial both to improve outcome of the cancer and to reduce side effects from the anti-cancer therapies. These articles and many others are available through the National Library of Medicine at the National Institute of Health, Bethesda, MD.

This is a brief summary of evidence in the medical literature regarding the use of antioxidants during cancer therapies, including radiation therapy and chemotherapy. A brief summary of some of the best articles, along with direct quotes are listed below. In addition, a short bibliography of interesting reading on this topic is given. Most are large review articles from peer-reviewed journals.

“Scientific Rationale for Using High-Dose Multiple Micronutrients as an Adjunct to Standard and Experimental Cancer Therapies”, KN Prasad, WC Cole, B Kumar, KC Prasad, from the Dept of Radiology, University of Colorado Health Sciences Center, Denver, CO, Journal of the American College of Nutrition, Vol 20, No 5, pp 450S-463S, 2001.

This article examines the criticism that antioxidants might interfere with effectiveness of radiation therapy and/or chemotherapy by destroying free radicals that are generated during therapy and protecting cancer cells against death. “none of the published data on the effect of antioxidants in combination with radiation or chemotherapeutic agents on tumor cells supports” this hypothesis. Scientific reasoning that supports the use of antioxidants during cancer therapy is examined and presented in this article.

“Antioxidants in Cancer Care: When and How to Use Them as an Adjunct to Standard and Experimental Therapies”, KN Prasad, Dept of Radiology, University of Colorado Health Sciences Center, Denver, CO, Expert Reviews in Anticancer Therapies, Vol 3, No 6, pp 903-915, 2003.

This large review article examines the effect of antioxidants on cancer cells themselves and on the outcome of cancer therapy. It also explains why some articles have conflicting results about the use of antioxidants and why it is important to examine the evidence from a statistical perspective. “These opposite recommendations are due to the fact that the results obtained from one experimental condition are extrapolated to another and no distinction between the effect of dietary and endogenously made antioxidants, or between doses, dose schedule, treatment period, form and number of antioxidants is made. this review discusses these issues and provides a biological and clinical rationale for the use of active and maintenance nutritional protocols as an adjunct to standard therapy and after therapy, respectively.”

“Cellular Protection with Proanthocyanidins Derived from Grape Seeds”, D Bagchi, M Bagchi, S Stohs, SD Ray, CK Sen, HG Preuss, Dept of Pharmacy Sciences, Creighton University School of Pharmacy and Allied Health Professions, Omaha, NE, Annals of the New York Academy of Science, Vol 957, pp 260-270, 2002.

Proanthocyanidins are one of the most powerful antioxidant substances known. This article demonstrated that the active antioxidant was absorbed and available to the cells and served as a "therapeutic tool in protecting multiple target organs from structurally diverse drug- and chemical-induced toxicity."

"Dietary Antioxidants and Human Cancer", C Borek, Dept of Community Health and Family Medicine, Nutrition Infectious Disease Unit, Tufts University School of Medicine, Boston, MA, Integrative Cancer Therapies, Vol 3, No 4, pp 333-341, 2004.

"Experimental studies show that antioxidant vitamins and some phytochemicals selectively induce apoptosis in cancer cells but not in normal cells and prevent angiogenesis and metastatic spread, suggesting a potential role for antioxidants as adjuvants in cancer therapy."

References

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"Antioxidants in Cancer Therapy: Their Actions and Interactions with Oncologic Therapies", DW Lamson et al, Alternative Medicine Review, Vol 4, No 5, pp 304-329, 1999.

"Antioxidants and Cancer Therapy II: Quick Reference Guide", DW Lamson et al, Alternative Medicine Review, Vol 5, No 2, pp 152-163, 2000.

"Antioxidants and Other Nutrients Do Not Interfere with Chemotherapy or Radiation Therapy and Can Increase Kill and Increase Survival, Part I", CB Simone et al, Alternative Therapies, Vol 13, No 1, pp 22-28, 2007.

"Antioxidants and Other Nutrients Do Not Interfere with Chemotherapy or Radiation Therapy and Can Increase Kill and Increase Survival, Part II", CB Simone et al, Alternative Therapies, Vol 13, No 2, pp 40-46, 2007.

"Pros and Cons of Antioxidant Use During Radiation Therapy", KN Prasad et al, Cancer Treatment Review, Vol 28, No 2, pp 79-91, 2002.