

Editorial

In the September 1999 issue of the journal *Oncology* (FYI: there are two Medline-indexed journals named *Oncology*) an article appears in which the authors discuss possible negative interactions of cancer chemotherapy drugs and concurrent use of antioxidants.¹ Citing the fact that some chemotherapy agents create reactive oxygen species (ROS), which cause the intended cellular damage to cancer cells, the authors suggest concurrent use of supplemental antioxidants should be avoided with the administration of chemotherapeutic agents which create ROS. These include alkylating agents (e.g., cyclophosphamide, ifosfamide, cisplatin), anthracycline anti-tumor antibiotics (e.g., doxorubicin, daunorubicin), other anti-tumor antibiotics (e.g., bleomycin, mitomycin), and podophyllum derivatives (e.g., etoposide, teniposide). Concurrent antioxidants are also advised against with chemotherapy agents with unestablished molecular pharmacology. In addition, clinicians are advised to “avoid high levels of antioxidants” with drugs which do not rely on ROS, “until long-term studies are done,” including hormones (e.g., tamoxifen), biological agents (e.g., interferon), antimetabolites (e.g., methotrexate, 5-fluorouracil), Vinca alkaloids (e.g., vincristine, vinblastine), and taxanes (e.g., paclitaxel).

It is not an unreasonable assumption that antioxidants, which react with and eliminate ROS, might have the capacity to interfere with the clinical effectiveness of drugs which create and use ROS to kill cancer cells. The authors of the *Oncology* paper rely on known pharmacology and pharmacokinetics of cancer drugs to make their predictions that antioxidants should not be used in cancer therapy. However, in their conclusion, after asking rhetorically, “Is there any actual evidence of antioxidant-chemotherapeutic drug interactions?” they provide a woefully unresponsive answer to their own question: “There are many anecdotes about such interactions.”

In this issue of *Alternative Medicine Review*, Davis W. Lamson, ND, and Matthew D. Brignall, ND, do answer the above question with a detailed, well-referenced paper which examines evidence in the scientific literature regarding the use of antioxidants as sole cancer therapy, as well as their concurrent use in radiotherapy and chemotherapy.² They rely on *in vitro*, and animal and human *in vivo* studies to establish their point: that antioxidants have been shown, in many cases, to be anti-neoplastic themselves, to enhance the effectiveness of radiation and chemotherapy regimens, and to reduce the toxic—and sometimes deadly—side-effects of conventional cancer therapies.

Contrary to the authors of the *Oncology* article, who in essence make a blanket statement against the use of antioxidants in chemotherapy, Lamson and Brignall do not advocate the use of antioxidants in every case, with every drug. Rather, they present a *rational*, cautious, research-based approach to the judicious use of specific antioxidants where the research says they can be helpful in combating the cancer, or at least not harmful to conventional approaches while reducing their toxicity.

We hope this paper will provide clinicians with useful clinical information about this issue, and that it will stimulate further discussion in the medical community and promote more interest in research regarding use of antioxidant nutrients in the care of the patient with cancer.

Alan L. Miller, ND
Senior Editor

References

1. Labriola D, Livingston R. Possible interactions between dietary antioxidants and chemotherapy. *Oncology* 1999;13:1003-1012.
2. Lamson DW, Brignall MS. Antioxidants in cancer therapy; their actions and interactions with oncologic therapies. *Altern Med Rev* 1999;4:304-329.