CHEMOTHERAPY

Supplements—for better or worse?

Chemotherapy-induced peripheral neuropathy is a very common and debilitating adverse effect of cancer therapy, which can often lead to treatment discontinuation. There are no good treatments or ways to prevent this adverse effect. However, preclinical studies and a phase II trial showed that the natural compound acetyl-L-carnitine (ALC) has efficacy, with improvements noted in some patients. This finding prompted Dawn Hershman and colleagues to conduct a prospective, randomized, placebo-controlled trial in women undergoing taxane-based adjuvant therapy for early stage breast cancer.

In total, 409 patients were randomly assigned to receive ALC or placebo. The primary outcome of the trial was patient-reported symptoms of peripheral neuropathy. Unfortunately, as Hershman summarizes, the results of the trial were negative. “Not only did we not find a protective effect of ALC at 12 weeks, we found that by 24 weeks there was a statistically significant worsening of

peripheral neuropathy in the patients on trials that were randomized to the ALC supplement.”

To the authors’ knowledge, this is the first study to show a detrimental effect of a supplement on the development of taxane-related peripheral neuropathy. As the use of complementary medicine is widespread, the study researchers caution that patients should be discouraged from using ALC and other nutritional supplements that do not have proven efficacy. Hershman comments on future plans for this area: “some studies are ongoing to see if ALC is more beneficial for treatment as opposed to prevention. We will investigate other approaches for treating and preventing this terrible side effect.”

Lisa Hutchinson

Original article Hershman, D. L. *et al.* Randomized double-blind placebo-controlled trial of acetyl-L-carnitine for the prevention of taxane-induced neuropathy in women undergoing adjuvant breast cancer therapy. *J. Clin. Oncol.* doi:10.1200/JCO.2012.44.8738