

Mills and Bone Academy

Educational Article

Can Herbs Help During Cancer Chemotherapy? – Kerry Bone

Countless surveys have shown that a significant percentage of cancer patients undergoing chemotherapy also take herbal supplements at the same time. For example, a UK systematic review of published studies found usage of herbal medicines ranged from 3.1 to 24.9% of cancer sufferers.ⁱ The reasons for this are many. An Australian survey of breast cancer patients identified the following key reasons for the use of vitamin and herbal remedies.ⁱⁱ

- To improve physical wellbeing (major reason)
- To boost the immune system (major reason)
- To reduce chemotherapy side effects (major reason for herbs only)
- To improve emotional wellbeing
- To prevent recurrence
- To assist in treating the cancer
- To reduce symptoms

In my clinical experience the key motivator for patients seeking to take herbs during chemotherapy is empowerment, taking control, being an active participant and

wanting to do everything possible to achieve the best outcome. A key part of this goal is to minimise the often terrible and debilitating side effects of the drug treatment. But is such a practice safe and beneficial? Do herbal treatments interfere with the chemotherapy? In the light of such uncertainties it is best to take an evidence-based approach.

Tonic and adaptogenic herbs have always been thought to have non-specific (whole body) antitoxic effects. Because they improve the resistance of the whole body to the stressor, the chemotherapy, they are less likely to interfere with its effects at a cellular level. The herb here with best evidence is ginseng.

In a key long-term Korean study, the impact of Korean red ginseng (*Panax ginseng*) therapy on postoperative immunity and survival was investigated in patients with gastric cancer.ⁱⁱⁱ Forty-nine patients who had undergone gastric resection with lymph node removal by the same surgeon for histologically-proven AJCC (American Joint Committee on Cancer) stage III gastric adenocarcinoma were enrolled in the trial. After the application of predefined exclusion criteria, 22 patients were given ginseng (4.5 g/day) for the first 6

months after surgery and 20 acted as placebo controls. All patients were also treated with chemotherapy each month for 6 months after surgery. The study demonstrated five-year disease-free survival and overall survival rates that were significantly higher in patients taking ginseng compared to controls (68.2% versus 33.3%; 76.4% versus 38.5% respectively, $p < 0.05$). In other words, the patients taking ginseng during their chemotherapy lived substantially longer!

Ginseng has also improved energy and quality of life (QOL) during chemotherapy. Sun ginseng is a red ginseng extract manufactured under a patented process in Korea. A randomized, placebo-controlled, double blind trial in 53 cancer patients undergoing “usual medical treatment” found that 12 weeks of 3 g/day of sun ginseng significantly improved QOL ($p = 0.02$) and general health ($p < 0.01$).^{iv} A well-publicised study in 282 cancer patients on American ginseng root (*Panax quinquefolium*), found that 750 to 2000 mg/day for 8 weeks significantly reduced cancer-related fatigue.^v

I also recommend other adaptogenic herbs during chemotherapy. Two key herbs here are Withania and Astragalus. There is certainly evidence of benefit for the latter, which is commonly used in China (often in combination) during chemotherapy. A meta-analysis of 34 randomised clinical trials involving patients with non-small-cell lung cancer treated with platinum-based chemotherapy and Astragalus-based Chinese products suggested a benefit from the combination.^{vi} Most trials involved formulas featuring Astragalus, but two were of Astragalus alone. The herbs were administered by injection in around one third of the trials. Twelve trials measuring

outcomes reported significantly lower mortality rates after 12 months when Astragalus was combined with chemotherapy (risk ratio 0.67). Nine studies reported significantly lower mortality rates after 24 months when Astragalus was combined with chemotherapy (risk ratio 0.73). Most of the studies included were of low methodological quality.

A Cochrane review identified four relevant trials where a decoction of Astragalus or a formulation featuring Astragalus were combined with chemotherapy regimens in patients with colorectal cancer.^{vii} Chemotherapy-induced nausea, vomiting, and low white cell count were all decreased by administration of Astragalus decoction, and immune function was improved. The trials were of low quality, suggesting larger, more rigorous trials are needed to confirm these results.

Codonopsis is widely prescribed in China in conjunction with conventional cancer therapies to reduce side effects and support immunity.^{viii} It was used as an adjuvant in 76 cancer patients during radiotherapy and reduced its immunosuppressive effect. Pharmacological studies suggest it can help white and red blood cell production.^{ix}

Nausea is a common side effect of chemotherapy. A randomised, controlled trial compared ginger root powder 1000 mg with the anti-nausea drugs metoclopramide and ondansetron in 50 cancer patients. Ginger was as effective as metoclopramide and slightly less effective than ondansetron in controlling vomiting and relieving nausea.^x Chemotherapy-induced delayed nausea was significantly reduced by a high protein meal

and drink in conjunction with ginger (1000 mg root powder) twice a day in a controlled clinical trial.^{xi} In a large clinical study funded by the US National Cancer Institute, 744 cancer patients, mostly with breast cancer, were included in a double blind trial.^{xii} Patients were either given a placebo or 3 different doses of ginger root as 250 mg capsules for 6 days, starting 3 days before chemotherapy. On the day of chemotherapy, they were also given a standard antiemetic drug. All the tested doses of Ginger significantly reduced nausea compared with the placebo, and surprisingly the largest reduction occurred for the lower ginger doses (500 mg and 1000 mg).

Mushrooms can also play an important role and can help mitigate the damage to the immune system from chemotherapy, due to the beta-glucans found in their fruiting bodies. The results of a randomised, double-blind, placebo-controlled trial indicate that Ganoderma extract (equivalent to 90 g/day of mushroom) may play an adjunct role in the treatment of patients with advanced lung cancer. After 12 weeks of Ganoderma treatment, stable disease occurred in 35% of patients, compared to 22% in the control group. Palliative effects on cancer-related symptoms and an increase in Karnofsky performance score occurred in a greater number of patients receiving Ganoderma.^{xiii}

Ganoderma extract enhanced the immune responses of patients with advanced stage cancer (mainly lung, breast, liver, colon, prostate, bladder, brain) in an uncontrolled trial of 12 weeks duration. Compared to baseline values, treatment with Ganoderma resulted in a significant increase in the mean plasma concentrations of interleukin (IL)-2, IL-6 and interferon-gamma and in the mean

natural killer activity.^{xiv} Similar results were observed in a trial involving patients with advanced lung cancer. In addition, treatment with Ganoderma extract (equivalent to 81 g/day of mushroom) decreased plasma tumor necrosis factor-alpha in more than half the patients. Most of these patients experienced less body weight loss, chronic nausea, fatigue, insomnia and profuse sweating.^{xv}

Treatment with Ganoderma extract for more than 12 weeks in uncontrolled trial lead to a stable disease state in 26.6% of patients with advanced solid tumours (mainly liver, lung, breast, ovary).^{xvi} In other uncontrolled trials Ganoderma extract improved the immune function and stamina of debilitated patients and cancer patients undergoing chemo- and radiotherapies.^{xvii}

Polysaccharide K (PSK) is a beta-glucan isolate from the fruiting body of the mushroom *Coriolus (Trametes) versicolor* approved as an adjunctive cancer treatment in Japan. The usual dose is 1.5 to 3 g daily in conjunction with chemotherapy, but also with radiotherapy and surgery. Significant improvements in 5-year survival rates in breast, lung, oesophageal, colorectal and gastric cancers have been demonstrated in controlled clinical trials, and in one meta-analysis (n = 8009) from 8 randomised controlled trials (RCTs).^{xviii}

A 2015 Canadian systematic review of use of PSK in lung cancer patients undergoing chemotherapy included 11 clinical trials of which 6 were RCTs. The evidence showed benefits for a range of endpoints, including immune and haematological function, performance status and body weight, tumour-

related symptoms such as fatigue and anorexia, as well as survival. The review concluded PSK may improve immune function, reduce tumour-associated symptoms, and extend survival in lung cancer patients.^{xix}

A final word of caution: any herbs, other than the ones mentioned above, are best used cautiously during chemotherapy (unless you have good evidence that they will not interfere). If there seems to be a good reason for taking them, they are best used around the chemotherapy, that is not within a 24 to 48-hour window either side of the actual chemotherapy treatments.

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