

Is it possible to use acupressure to reduce adverse effects related to radiotherapy?

Cancer is one of the most important health problems in both low/middle income countries and developed countries, and its increasing prevalence across the world accentuates the urgent need to find effective solutions to this global health issue. Patients with cancer are increasingly resorting to complementary and alternative medicine (CAM) treatments to boost their immune systems, feel mentally stronger, and to overcome cancer-related symptoms and adverse effects of cancer treatment, in order to continue effective treatment and thereby increase life expectancy and quality of life. Meanwhile, medical centres using classical or modern procedures are increasingly acknowledging such techniques and have started to incorporate them into their treatment approaches. This has contributed to the development of CAM. It was recently estimated that 7–54% of the US population use CAM;¹ moreover, it appears that its use has notably increased among patients with cancer, especially over the last 20 years.

CAM does not ignore any of the psychological, sociological, biological or spiritual elements of an individual's life and thus respects all these dimensions. In complementary medicine, various treatment methods have been used that are inspired by and/or directly obtained from nature, or derived from the accumulated experience, wisdom and knowledge of ancient cultures. There is a wide range of CAM techniques including plants, vitamins, massage, acupuncture, music, hypnosis, prayer and suggestion therapy.^{1,2}

Acupressure, a form of traditional Chinese medicine with over 4000 years of history, is a non-invasive, safe and effective technique,

that can increase circulation by applying pressure to points on the body, typically the fingers, wrist, hand or palm.^{2–4} Acupressure stimulation facilitates the production of endorphin and enkephalin (endogenous opioids), which inhibit transmission of painful stimuli to the somatosensory cortex via the spinal cord. Endorphins can improve circulation by directly reducing vasoconstriction, or by accelerating the excretion of substances that promote vasoconstriction. On the other hand, enkephalin inhibits receptors on somatosensory nerve endings, blocking perception and transmission of nociceptive stimuli. Acupressure stimulation may also modulate the balance between the sympathetic and parasympathetic components of the autonomic nervous system; this plays an important role in repair mechanisms and maintenance of homeostasis, which in turn is implicated in many chronic diseases.^{3–5}

Before and after surgery, it has been reported that acupressure reduces musculoskeletal pain, especially of the head, neck and back, and alleviates many other symptoms such as fatigue, nausea, vomiting and itching. It may also reduce the dose requirements of drugs and has therefore become a popular treatment option in oncology, though there are a limited number of academic studies in this area. In their examination of the effect of acupressure on emesis control in postoperative gastric cancer patients undergoing chemotherapy, Shin *et al* found that acupressure at PC6 (*Neiguan*) significantly reduces the severity of nausea and vomiting, as well as the duration of nausea and frequency of vomiting.³ Similarly, Ezzo *et al* found that acupressure reduces the severity of acute chemotherapy-induced nausea and vomiting.⁴ In their investigation of the effectiveness of acupressure bands for radiotherapy-induced nausea, Roscoe *et al* observed a reduction in nausea compared with a control group.² Finally, Beikmoradi *et al* recommended

acupressure as a complementary therapy to reduce anxiety in cancer patients because of its low cost, safety and simplicity.⁵

In summary, complementary approaches are being increasingly used in patients with cancer. Acupressure may release muscular tension, promote circulation of blood, and thereby relieve pain, strengthen immunity and promote healing. Although it is known that penetrating acupuncture, whether used on its own or together with pharmacological methods, alleviates radiotherapy-associated fatigue, xerostomia, nausea and vomiting, and relieves cancer pain, there is still insufficient information about the potential benefits of acupressure. In order to improve our understanding, it is important to support prospective clinical studies investigating its role in the prevention and control of adverse effects related to radiotherapy.

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