

Rethinking traditional Chinese medicines for cancer

This month, traditional Chinese medicines (TCMs) have taken centre stage in the medical field: Tu Youyou, a Chinese researcher from the China Academy of Traditional Chinese Medicine in Beijing was jointly awarded the Nobel Prize in Physiology or Medicine for her discovery of the naturally based compound, artemisinin, a treatment for malaria. In addition, Sinohealth Intelligence recently estimated that China's market for herbal remedies for cancer increased by 35% to nearly US\$2.7 billion last year. With growing interest in the use of TCMs—the US National Cancer Institute is now funding numerous studies to explore the anti-cancer potential of some of these remedies—what role do these preparations have in medical research in general and in oncology in particular?

Although several common chemotherapeutic agents have been derived from natural sources—eg, paclitaxel from the Pacific yew tree, and vinblastine from the Madagascar periwinkle—few randomised controlled trials have adequately assessed the safety and efficacy of TCMs, and poor reporting has hampered their implementation in the western market. Despite this, recent research has shown that some TCMs can be beneficial in combination with conventional medicine and that some remedies can be used as effective chemosensitisers and radiosensitisers, as well as in palliative care. For example, results from a meta-analysis published in the *Journal of Cancer Research and Therapeutics* last month showed that the Shenqi Fuzheng injection—made from Chinese medicinal herbs—can improve clinical efficacy and decrease radiation toxicity in patients with non-small-cell lung cancer; sales of the remedy generated around 1.3 billion yuan in 2014. Another study published earlier this year showed that PHY906(KD018), which uses ingredients from TCM, enhances the anti-tumour activity of sorafenib in mice by inducing tumour-cell apoptosis by increasing macrophage infiltration—a particular area of interest given recent research into the potential of immunotherapy. Although the two studies show interesting, albeit preliminary, findings, neither study identified the single active component responsible for the apparent anti-cancer activity—a major caveat if the use of these compounds is to have wider clinical value and be used as a reliable anti-cancer therapeutic.

Caution is clearly warranted, however, in the use of TCMs. Clinical studies that have investigated these agents often fail to follow internationally recognised research guidelines such as CONSORT, which undermines their reliability when comparing results across trials, and often an over-reliance on anecdotal evidence can negate the integrity of scientifically controlled experiments. Other methodological issues—eg, the use of a TCM practitioner so that interventions can be tailored to the individual patient—not only cause complications in doing randomised trials to compare these remedies with standardised agents, but also represent fundamental differences (both culturally and philosophically) in implementing alternative medicines into a setting that is mainly dominated by western practices. Compounding the issue, there is also a general lack of understanding by most biomedical practitioners about the use and practice of TCM and other herbal treatments both alone, and in combination with, anti-cancer therapy.

However, too much scepticism might hinder efforts in discovering new agents from TCM compounds and, like in the case of malaria, a properly evaluated natural product could become a medical breakthrough. Rather than turn a blind eye to this potential source of agents, increased regulation and an insistence on high-quality pre-clinical and clinical investigation could be the way forward. Indeed, history shows that medicines derived from natural products have a valuable role in anti-cancer treatment, and as such, should be assessed both in terms of effectiveness and possible harms in similar ways to other forms of medicine. This is particularly important at a time when low-income and middle-income countries, such as China and India—two of the biggest exporters of herbal remedies worldwide—become key players in the global market, and when the development of new medications are being hampered by lengthy research and development and approval processes. It is important, therefore, that a balance is struck between seizing a real opportunity for drug discovery and integrative oncology, and maintaining sufficient scientific rigour to allow the medical community to have faith in the merit of traditional medicines.

■ *The Lancet Oncology*



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For more on the **2015 Nobel Prize in Physiology and Medicine** see [World Report](#) *Lancet* **386**: 1433

For the **paper on Shenqi Fuzheng** see *J Cancer Res Ther* **2015**; **(11 Suppl)**: c101–03

For the **paper on PHY906(KD018)** see *Sci Rep* **2015**; **5**: 9384