

## **Did the Herbs Cause That?**

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One of my tasks at the Institute for Traditional Medicine (ITM) is to field questions from practitioners about their use of Chinese herb formulas. After more than 20 years of doing so, I've noted a distinct shift in the types of questions asked. Formerly, the questions were usually in reference to treating patients who presented a complex case or rare disease, where the practitioner wondered where to start with herbal therapies, or they were unsure of how to progress from an initial treatment to a next stage of therapy. Recently, however, the questions are about the possibility that the herbs prescribed by the practitioner had been responsible for a negative reaction relayed by the patient, or whether the herbs could be prescribed at all, for fear of interactions with drugs the patient is already taking.

The reason for this shift, I suspect, is that there has been so much negative publicity about Chinese herbs, and about herbs in general. Patients and their medical doctors are very worried about the potential negative impact of taking herbs, and are often willing to very readily attribute dire consequences to their use. This problem is compounded by a lack of fundamental knowledge by many of the prescribing practitioners about what the herbs can and cannot do and what chemical constituents they contain.

I would like to relay two examples of incidents reported to me that help illustrate the nature of the situation. In the first instance, a patient was just a few days into a regimen of Chinese herbal therapies (taking tablets) when he experienced a sudden severe blurriness of vision that persisted. He went to his doctor, who noted that his pupils were markedly dilated, and subsequent visits to medical specialists were unable to determine what had happened. However, the pupil dilation in the absence of other obvious signs indicated to at least one of the specialists that the patient was suffering from a reaction to a chemical agent (it is well known that some drugs cause pupil dilation). No sooner was he asked what he had recently taken than the Chinese herbs became the prime suspect. Lists of the ingredients (commonly used Chinese herbs reputed to be non-toxic) were examined, literature was consulted, and the tablets were sent off to a laboratory. Several tests of the patient, including a brain scan to check for a stroke, were conducted without finding any other cause.

The prescribing practitioner contacted me and asked if this response was an expected side effect of the herbs. I was also asked about possible mechanisms by which the herbs could cause this response, in terms of traditional Chinese thinking: e.g., did the tonic nature of the herbs (mainly yin and blood nourishing herbs with astringents) cause a worsening of internal wind that could have produced this response? From my knowledge of the herbs (including botanical sources and chemical constituents) and the theories of Chinese medicine (that the tonics involved would be interpreted as helping to calm internal wind, not worsening it), I assured the practitioner that the herbs were an unlikely causative agent. The practitioner then mentioned that between starting the herbs and experiencing the blurred vision, the patient (an elderly male with some typical problems associated with aging) had gone to a wedding party and consumed a lot of rich foods and alcohol. From the traditional Chinese medical perspective, that would be deemed a sufficient cause of the blurred vision (see: the ophthalmology text *Essential Subtleties on the Silver Sea*, translated by Evans and Unschuld).

A few days later, the nature of the situation was resolved. The patient's own eye doctor performed some more detailed tests and found out that his patient was suffering from macular degeneration and retinal tears. Checking the patient's prior records, the doctor found evidence from at least six months earlier that this problem existed in a milder form, but the diagnosis had been missed at that time. This disease can progress gradually, but may have sudden worsening. It is possible, though we cannot know for certain, that the excesses at the wedding party contributed to the sudden worsening. For the moment, the herbs are off the hook, but the practitioner involved still seems to believe that the administration of the herbs was a contributor, via an effect on internal wind.

A second case involved a woman in her twenties who had just started an herbal therapy. She was driving in her car, apparently had gotten dizzy and blacked out, and crashed. Thankfully, she was in slow traffic, so the crash did not cause any injury itself, but she was taken to the hospital. The attending doctors immediately deemed the Chinese herbs to be the cause of her black out. In this case, the practitioner and the patient were not readily convinced of the role of the herbs in this incident, but the practitioner experienced a second report of adverse reaction from the same formula at about the same time. Another patient complained that, after taking a single day's dose, she was agitated, was sweating excessively, and had insomnia. It would seem

from these dual cases that the herbs caused a severe neurological response.

The herb formula was one that is very widely used, one of many preparations of Erchen Wan (Citrus and Pinellia Formula, a prescription for resolving phlegm). This particular batch had been used extensively without complaint, as has the formula in its numerous forms. A few days later, the practitioner reported that the problem with the herbs had been resolved. Upon further testing, the doctors discovered that the patient who blacked out not only had a form of epilepsy, but that she had a family history of epilepsy, and that this experience was likely the patient's first episode of a potential life-long disorder. The practitioner then relayed the fact that the other patient, who had complained of the nighttime agitation, was prone to such problems and had just gone through a very stressful time. The practitioner was sure that the herbs were not involved in the reported symptoms.

In the cases of blurred vision and blacking out, the symptom blamed on the herbs was rather severe, which led to further testing of the patients and eventual determination about causes, finally alleviating complaints about the herbs. I have been told of several other such alleged reactions that were either finally resolved or had a clear alternative explanation. However, in most cases, the purported herb reactions are less severe, and an alternative explanation is not developed due to lack of proper investigation. Therefore, the sense that the herbs are causing many adverse reactions can persist and grow over time.

It is important for practitioners to become more familiar with the nature of the herbs they prescribe and the expected responses to them, so as to be able to respond to concerns about and allegations of adverse reactions. One reason that practitioners may not know how to provide a satisfactory answer is that the normal and expected responses to herbs are not known: the practitioner doesn't have a frame of reference. The majority of herb texts do not cover this subject.

Generally speaking, about 95% of an herb (crude dried herb as appears in Chinese pharmacies) is medicinally inactive and comprised of carbohydrate materials such as cellulose, starch, and simple sugars; fats, such as heavy oils and simple fatty acids; and proteins, mostly complex structural proteins and enzymes with some free amino acids. In addition, there are vitamins, minerals, and other compounds that are typical of what is found ordinary foods. The presence of these ordinary substances, some of which are removed when making

extracts, are the reason why the dosage of herbs needs to be so high compared to drug therapies.

About 5% of an herb, often less, is comprised of some active compounds that are either different from those found in foods, or similar to those found in foods but in larger quantities. These mainly fall into the following groups:

1. Terpenes (subdivided into mono-, di-, tri-, and sesqui-terpenes); virtually all of these are safe compounds that promote circulation and calm agitation. As an example, the triterpenes of ginseng, zizyphus, bupleurum, and ganoderma can be consumed in quantities of several hundred milligrams to safely provide circulation-promoting and sedative effects.
2. Flavonoids (subdivided into flavones, isoflavones, anthocyanidins, etc.); virtually all of these are safe compounds that promote circulation and alleviate allergy reactions. As an example, the flavonoids in ginkgo leaf, pueraria, and citrus are known to have these effects and are used in doses of several hundred milligrams.
3. Pyrones, quinones, and other oxygenated compounds; virtually all of these are safe compounds that promote circulation and alleviate spasms and pain. As examples, the benzopyrones of tang-kuei, cnidium, and chiang-huo and the quinones of salvia are all used to aid circulation and relieve pain, and are used in doses of several hundred milligrams.
4. Alkaloids; several alkaloids have the potential for significant adverse effects, because alkaloids often interact with the nervous system. However, Chinese herbs that rely on alkaloids are often selected because of their mild activity; most have antibacterial, fever reducing, and sedative effects. Examples are coptis, phellodendron, and sophora; even these herbs can have adverse effects if the dosage is too high and if the administration of high doses is continued over a long period. Nonetheless, the alkaloids of these herbs are often consumed in quantities of several hundred milligrams per day without adverse reactions.

A gram of herbal material that contains 5% of one of these groups of active constituents will provide 50 mg of those compounds. Thus, several grams of the herb can usually be taken while the amount of active components consumed remain within the hundreds of milligrams that are safe and without any significant adverse effects. Chinese herbs that have significantly toxic compounds, such as strychnos, datura, raw aconite, and croton, are not incorporated into the Western practice of traditional Chinese medicine.

In the cases of suspected adverse reactions, such as the cases I cited above, alkaloid components would be the primary suspect. But, the formulas involved did not include any significant amounts of alkaloids, making it extremely unlikely that the herbs could have played any role in the reported actions, especially with such short-term use and with the modest doses consumed. By knowing something about the content of the herbs, the types of activities to be expected from the active constituents, and the dosages involved, one can analyze most reports of potential adverse reactions and draw some tentative conclusions. Frequently, patients, medical personnel, and practitioners who have had limited training in herbal medicine will jump to conclusions about the role of herbs in producing a certain reaction. Information about the content of herbs, their pharmacology, clinical effects, potential adverse reactions, and other valuable data are available in English language books and journals, and from several organizations (including ITM and the Oriental Healing Arts Institute that have focused on these areas). It is important for practitioners to study such materials before patient complaints are received so that it is possible to provide a rational response promptly and initiate a proper investigation. A good understanding of the mechanisms and timing of various types of reactions (such as allergies and toxic responses), interactions (mainly between herbs and drugs), as well as the traditional Chinese interpretation of herb effects (such as contraindications), will make it possible to prescribe herbs with confidence and respond to concerns authoritatively.

**NOTES:**

Thank Dr.Subhuti Dharmananda for this nice article which will give our patients and the general public some more information on chinese herbs. Confidence of using chinese herbs will be build up gradually through everybody's hard work. (Guan)