EDITORIAL

Herb-drug Interaction: An Emerging Issue of Integrative Medicine

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With the increasing enhancement of people's awareness of self-care, the voice for humans to return to nature is growing louder and louder. Drugs with natural plants as raw materials are increasingly favored by people all over the world for their unique advantages in preventing and curing diseases, rehabilitation and health care, especially in Europe, the United States and many Asian countries. According to statistics, in the United States alone, there are currently more than 15 million people using herbal preparations in varying degrees, including Chinese herbal medicines, as either a therapy or an adjuvant therapy for various diseases at present, with the annual cost of approximately 30 billion U.S. dollars⁽¹⁾.

Because of the integrative medical model of patient-centered healthcare and a combination therapy with both botanical and chemical drugs evolving into a new trend of the modern medicine in preventing and curing diseases, the combined applications of Chinese and Western medicine are also increasing, and the potential of their interactions are raising more and more concern. Recently, the *Journal of the American College of Cardiology* published an article reporting that patients with cardiovascular diseases consumed a number of botanical products including Chinese herbal medicines while taking the Western medicine, which may increase the risk of cardiac event due to herb-drug interactions⁽²⁾. After searching associated literatures of PubMed and Medline databases from 1966 to 2008, it is considered in this article that some botanical products including Chinese herbal medicines such as *Hypericum perforatum* Linnaeus, *Leonurus artemisia*, *Panax ginseng*, *Ginkgo biloba*, *Crataegus pinnatifida*, *Serenoa serrulata*, *Salvia miltiorrhiza* Bunge, *tetrandrine*, *BulbusAllii*, and *Aconitum carmichaeli* Debx, etc. may all increase the risk of adverse events in patients with cardiovascular disease through the interactions with other drugs, particularly in those elderly patients taking multiple drugs for comorbid conditions.

However, the results of herb-drug interaction were not consistent. For example, although some studies indicated the interactions between ginkgo biloba and warfarin, a randomized, double-blind, placebo-controlled cross-over trial in 2003 demonstrated that ginkgo biloba did not influence the clinical effect of warfarin⁽³⁾. Furthermore, a systematic review of randomised clinical trials in 2005 also did not demonstrate that extract of ginkgo biloba caused significant changes in blood coagulation parameters or had an additive effect to the clinical effects of aspirin or warfarin⁽⁴⁾.

In response to this issue, we should take an objective and realistic attitude. According to the clinical experiences and research findings of doctors in China, the majority of Chinese herbal medicines are still safe in clinical applications and can have synergistic effects or even reduce the toxic side effects when combined with chemical drugs in most cases, such as the application of many Chinese herbal medicines in relieving clinical symptoms, reducing toxic and side effects of chemotherapy, decreasing drug-resistance of some Western medicines as well as assisting the withdrawal of glucocorticoid, which reflect the complementary advantages of integrative medicine⁽⁵⁻¹⁰⁾.

Nevertheless, clinicians should pay more attention to considering and distinguishing results from evidence-based medicine so as to foster strengths and circumvent weaknesses but not shield the shortcomings of integrative medicine, and give great concern to drug interactions that have already been found in clinical practice to avoid the off-label use, long-term drug overdose and the non-rational

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combined use of drugs aiming at minimizing the risk of adverse events in patients. For special population such as elderly people taking a variety of chemicals due to comorbidities, children, pregnant women, immunosuppressive patients, perioperative patients as well as those with liver and kidney dysfunction, or taking drugs with narrow therapeutic index such as digoxin or warfarin, we should strengthen monitoring to timely detect adverse effects of potential herb-drug interactions, make detailed, verified records and report to relevant drug administrations for further investigation and analysis, so as to accumulate first-hand knowledge of herb-drug interaction in clinical practice. On this basis, a variety of researches associated with pharmacodynamics, pharmacokinetics, efficacy, toxicity and toxicity-efficacy relevance, as well as the mechanism of herb-drug interaction aiming at drug absorption, distribution, conversion, metabolism and excretion, should be designed scientifically and conducted actively for further promoting the rationally combined use of Chinese and Western medicine. At present, some universities and institutes have established special departments of drug interactions, which is worthy of learning.

In light of the emerging issue in the integrative medicine, *Chinese Journal of Integrative Medicine*, as the first Chinese journal in the field of Chinese medicine and integrative medicine included by Science Citation Index-Expanded (SCI-E) to be the source magazine, has started a column of '**Herb-drug Interaction**' to publish rigorous and well-designed clinical or experimental research articles relating to synergistic effects, reduced toxic or side effects, as well as adverse herb-drug interactions occurring during combined use of Chinese and Western medicine, with a view to providing a more open, timely, and academic exchange platform for researchers of integrative medicine and give more valuable information and objective evidence for herb-drug interactions. This will certainly further standardize the clinical practice in combined use of Chinese and Western medicine, and provide patients with more effective and safe integrative medical services.

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