Open Communication between Patients and Doctors about Complimentary and Alternative Medicine Use: The Key to Avoiding Harmful Herb-Drug Interactions among Cancer Patients

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Complementary and alternative medicine (CAM) is defined by the National Center for Complementary and Alternative Medicine (NCCAM) as a group of diverse medical and healthcare systems, practices, and products that are not generally considered to be a part of conventional medicine, including biologically based therapies, mind-body medicine practices, manipulative and body-based practices, and alternative medical systems [1]. Over the past two decades, CAM has become widely used in the United States. For instance, the 2007 National Health Interview Survey by the NCCAM and the National Center for Health Statistics showed that overall 38% of adults in the United States were using some forms of CAM, and accordingly, total expenditures for CAM therapies were estimated at $34 billion in 2007 [2].

Research has shown that cancer patients are much more likely to use CAM therapies than the general population. During disease trajectory, as many as 50-83% of adult patients with cancer and 84% of children with cancer in the United States report using CAM at least once after the diagnosis of cancer [3,4]. The vast majority of cancer patients use CAM as complementary therapies in conjunction with conventional cancer treatments, rather than alternative therapies which are used in place of conventional cancer treatments. The main reasons cited by cancer patients for CAM use include treating the cancer, relieving cancer-related symptoms, alleviate side-effects caused by conventional cancer treatments, managing co-morbidities, and boosting their immune system, with the expectation of improved quality of life (QOL) [3,5-7]. Of various CAM therapies, herbal/natural products and special diets (herein referred to as herbal medicines) are among the most commonly used forms by cancer patients, and nearly half of users take more than one type of herbal medicines [7,8].

Interestingly, although improving QOL is a major motivation or expectation for using herbal medicine by cancer patients, several population-based studies have reported that herbal medicine use was associated with a lower QOL score and a poorer survival among cancer patients [9,10]. The underlying reason, however, is unclear. It is possible that the lower QOL scores of the herbal medicine users might result from some of the users using herbal medicines inappropriately. If herbal medicines are used multiply and/or together with conventional medicines inappropriately, it may expose users to harmful herb-drug and herb-herb interactions, which may in turn result in serious adverse consequences and worsen QOL.

Although many herbal medicines have been used for hundred years, research on its use in cancer medicine is a relatively new field. There is very limited scientific evidence available on the safety and efficacy of herbal medicine use among cancer patients. Since herbal medicines often contain multiple pharmacologically active constituents, its extensive use with conventional medicines by cancer patients has raised a serious safety concern, especially about harmful herb-drug and herb-herb interactions. Evidence has shown that many popular herbal medicines can affect the metabolism of anticancer agents and other prescription or over-the-counter medicines via cytochrome P450 (CYP) and/or P-glycoprotein induction, and such interactions often lead to increased toxicity and/or sub-therapeutic effects [11-14]. Research on interactions of commonly used herbal medicines with chemotherapy has suggested that concurrent use of chemotherapeutic agents with certain herbal medicines should be avoided [15]. For instance, cyclophosphamide, epipodophyllotoxins, and vinca alkaloids can interact with Ginkgo biloba and ginseng (CYP3A4 and CYP2C19 inhibition) or with Echinacea, kava kava, and grape seed (CYP3A4 induction); dacarbazine with garlic (CYP2E1 inhibition); and allylating agents, antitumor antibiotics, and platinum analogs with Ginkgo biloba or grape seed (free-radical scavenging); cyclophosphamide with valerian (CYP2C19 inhibition), and Imatinib with St. John’s wort (CYP3A4). Furthermore, cancer patients often have other chronic medical conditions, such as cardiovascular diseases, diabetes, and depression, while many medications for these diseases may also interact with certain herbal medicines [11,14]. For instance, Ginkgo biloba has antiplatelet activity and is a platelet-activating factor receptor antagonist; patients take ginkgo biloba and drugs with effects on platelet function and/or coagulation (e.g., warfarin, aspirin, ibuprofen) concurrently may experienced bleeding. In addition, many cancer patients tend to use more than one herbal medicine. Thus, herb-herb interactions may occur if concurrently used herbal medicines have the same side effects. For instance, garlic, Ginkgo biloba, and American ginseng all have antiplatelet or anticoagulant activity; if being concurrently used, the risk of bleeding will increase [16].

Thus, the risk of potentially harmful herb-drug interaction will increase if doctors are not aware that their patients are taking herbal medicines. Open communication between patients and doctors about herbal medicine use is critical in avoiding such interactions. However, only a few studies to date have explored this issue. Existing data shows that around 40-50% (with a range of 20-77%) of cancer patients did not disclose CAM use to their doctors [17]. The most common reasons for nondisclosure were the doctor’s lack of inquiry, patient’s perception of the doctor’s disapproval, doctor disinterest, or inability to provide information on CAM, and patient’s perception that their CAM use is irrelevant to their conventional care [17]. Studies also found that when patients perceived their doctor to be respectful, open-minded, willing

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to listen, they were more like to reveal the use of CAM [17]. These suggest that to effectively establish patient-doctor communication, doctors should actively screen about the use of CAM in each patient and encourage patients to provide detailed information on their use, especially herbal medicine use. Furthermore, doctors need to know enough about commonly used herbal medicines, as well as potentially harmful herb-drug and herb-herb interactions, to provide reliable information to guide appropriate use. We believe that herbal medicine use is a double-edged sword; appropriate use will help cancer treatments and improve QOL, whereas inappropriate use may result in harmful herb-drug or herb-herb interactions and in turn worsen health status and QOL. The key to avoiding harmful herb-drug or herb-herb interactions, maintaining patient safety and improving patient well-being is open communication between patients and doctors about CAM use.

In conclusion, given that a high prevalence of CAM use and the high risk of potentially harmful herb-drug interaction among cancer patients, patient-doctor communication about CAM use is an extremely important part of cancer care. The development and evaluation of effective interventions to improve the disclosure of CAM use should be an integral part of the future research in this area.

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