Herbs as Medicines

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Herbs and related products are commonly used by patients who also seek conventional health care. All physicians, regardless of specialty or interest, care for patients who use products that are neither prescribed nor recommended. Some herbs have been extensively studied, but little is known about others. When a patient asks for advice regarding the use of a particular herb, how should a physician respond? Similarly, how does a physician determine if a patient’s symptoms are caused by a “remedy”? This review attempts to answer these questions by investigating pertinent definitions, the history of herbs in medicine, epidemiology and prevalence of herbal use, and relevant psychosocial issues.

While a complete review of specific herbs is impossible in this setting (>20,000 herbal and related products are used in the United States), the potential benefits and hazards of some of the more popular herbal products in use are examined (Table 1).

HISTORY

The earliest evidence of humans’ use of plants for healing dates back to the Neanderthal period. In the 16th century, botanical gardens were created to grow medicinal plants for medical schools. Herbal medicine practice flourished until the 17th century when more “scientific” pharmacological remedies were favored.

In the United States, the history of herbal use begins in the early colonial days when health care was provided by women in the home. Initially, they used homemade botanical remedies and later purchased similar products as “patent medicines.” In the early 19th century, scientific methods became more advanced and preferred, and the practice of botanical healing was dismissed as quackery. In the 1960s, with concerns over the iatrogenic effects of conventional medicine and desire for more self-reliance, interest in “natural health” and the use of herbal products increased. Recognition of the rising use of herbal medicines and other nontraditional remedies led to the establishment of the Office of Alternative Medicine by the National Institutes of Health (Bethesda, Md) in 1992. Worldwide, herbal use again became popular; in 1974 the World Health Organization (Geneva, Switzerland) encouraged developing countries to use traditional plant medicines to “fulfill a need unmet by modern systems.”

Thirty percent of all modern drugs are derived from plants. Some of the more familiar ones are listed in Table 2.

EPIDEMIOLOGY

Estimates of the prevalence of herbal medicine use differ, with studies concluding that between 3% and 93% of the US population uses herbs (Table 3). The variability of these estimates is due to discrepant definitions of herbs (Table 1) as well as different inclusions of the length of use (ie, ever vs in the last 12 months).

Internationally, the use of botanical medicines is generally higher. For example, 70% of “Western” doctors in Japan prescribe kampo drugs daily. Eighty percent of the world’s population relies primarily on traditional medicines for their health care needs. It is certain that physicians are seeing patients who are using herbs, and, as is discussed, this use can affect the patient’s health problems and effects of conventional treatments.

ECONOMICS AND REIMBURSEMENT

The amount of money spent on herbal remedies is significant. Americans spent $553 million in 8000 health food stores in 1994, and from all sources, the estimate of US “medical” herb sales is $1.2 billion.
The growth in the conventional drug market, far exceeding that of herbs, is the largest growth area in retail pharmacy, with sales growing by 20% a year, and herbs (range, $0-$175) individual products have variable costs, dependent on both the product and its source (homegrown, imported, from a health food store, or from an herbalist). In another study of herb use among patients with acquired immunodeficiency syndrome (AIDS), one product recommended by a health food store sold for almost $150 a month.

Insurance plans and managed care organizations are beginning to offer reimbursement for alternative treatments. In fact, coverage of chiropractic treatment is mandated by law in at least 45 states, acupuncture in 7 states, and naturopathy in 2 states.

WHY DO PEOPLE USE HERBAL MEDICINES?

There are multiple reasons patients turn to herbal therapies. Often cited is a “sense of control, a mental comfort from taking action,” which helps explain why many people taking herbs have diseases that are chronic or incurable, such as diabetes, cancer, arthritis, or AIDS. In such situations, they often believe that conventional medicine has failed them. When patients use home remedies for acute, often self-limited conditions, such as a cold, sore throat, or bee sting, it is often because professional care is not immediately available, too inconvenient, costly, or time consuming.

In rural areas, there are additional cultural factors that encourage the use of botanicals, such as the concept of an interplay between the environment and culture, a “man-earth” relationship. Religious beliefs, which can be traced to the medieval doctrine of signatures, are also prominent: “The good Lord has put these yerbs here for man to make himself with. They is a yerb, could we but find it, to cure every illness [sic].” People believe that where an area gives rise to a particular disease, it will also support plants that can be used to cure it.

Natural plant products are perceived to be healthier than manufactured medicines. Additionally, reports of adverse effects of conventional medications are found in the lay press at a much higher rate than reports of herbal toxicities, in part because mechanisms to track adverse effects exist for conventional medicines whereas such data for self-treatment is harder to ascertain. Even physicians often dismiss herbs as harmless placebos, and many consumers and physicians alike mistakenly believe that anything in a pill form has been approved by the US Food and Drug Administration (FDA).
REGULATION: DIETARY SUPPLEMENT AND HEALTH EDUCATION ACT

In 1993, the FDA began scrutinizing the herbal and supplement industry, which triggered a massive letter-writing campaign organized by health food stores that encouraged consumers to “write your congressman or kiss your supplements goodbye.” Under pressure, the FDA compromised its plans, creating the supplement category, which includes vitamins, minerals, and herbs and created the Dietary Supplement and Health Education Act (DSHEA) signed October 1994. The DSHEA requires no proof of efficacy, no proof of safety, and sets no standards for quality control for products labeled as supplements. Although the DSHEA requires that supplements not promise a specific cure on the label, they may claim effect. Now, if questions arise, the burden lies with the FDA to prove a product unsafe, rather than a company proving its product safe. Manufacturers must put a message on the label stating that claims have not been reviewed by the FDA, but this statement can be subtle. In contrast, regulating agencies in Germany, France, the United Kingdom, and Canada enforce standards of herb quality and safety assessment on manufacturers.

Because of the lack of requirements for quality control, safety, and efficacy, consumers cannot determine if an herb’s active ingredients are actually in the product, if the ingredient is bioavailable, if the dosage is appropriate, if the next bottle they buy will have the same components, or what else is in the pill besides the claimed ingredients.

QUALITY CONTROL

Any particular herb or mixture can vary from manufacturer to manufacturer and from batch to batch; an herb that is not toxic or therapeutic in one form or strength may be helpful or harmful in a different preparation.

Potency of various compounds is affected by growing conditions, storage, handling, and preparation such that potency of various products from the same plant can vary 10,000-fold. Manufacturers use varying methods for processing the same herbs; for example, the plant can be ground up and put into pill form, or pharmaceutical methods can be used to extract the desired compound, assay the composition, and make tablets of consistent strength.

Consumer Reports looked at the composition of 10 different ginseng products on the market in 1995. The amount of ginseng per tablet was listed on the labels, but the amount of ginsenosides, thought to be the active components, was not listed. They found striking differences between the products (Figure), which could have an impact if a patient changed from one brand to another, especially as ginseng does have dose-dependent adverse effects.

Labels may be incorrect, accidentally or intentionally. The same common name may be applied to different plants recommended for different illnesses. Some products labeled as ginseng actually also contain mandrake (scopolamine) or snake-root (reserpine) because of the high cost of pure ginseng. Additives may be used, yet not listed on labels; they may be the source of the therapeutic effect. Examples include steroids, nonsteroidal anti-inflammatory agents, prescription antibiotics, sedatives, and narcotics.

Herbs can be misidentified or the wrong part of the plant may be picked. Such an error was the cause of an outbreak of belladonna poisoning attributable to an herbal tea in New York City, and a similar misidentification led to digitalis poisoning from a mislabeled plantain extract.

Heavy metals are often found in herbal preparations from other countries as they are thought to help cure without being absorbable. However, there are multiple reports in the literature of poisoning with lead, arsenic, cadmium, copper, and mercury found in herbal preparations from foreign countries. Also problematic with herbs imported from foreign sources is that written instructions, if any, are often in foreign languages.

Efficacy and Safety Studies

Controlled studies of herbal medicines are not profitable. There is little motivation for manufacturers to conduct randomized, placebo-controlled, double-blinded clinical trials to prove efficacy because (1) they are not required to do so and (2) they cannot patent the product to recoup the estimated $350 million it costs to prove a new drug effective and safe. An entirely new drug must be created, or a novel extraction proce-

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Table 3. Representative Epidemiological Studies of Herbal Medicine Use

<table>
<thead>
<tr>
<th>Source, y</th>
<th>Patient Population</th>
<th>Prevalence of Herbal Use, %</th>
<th>“Risk Factors” for Use</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown and Marcyn 1991</td>
<td>Kaiser Permanente, Portland, Ore (n = 100)</td>
<td>93</td>
<td>Married, larger household, higher income, health food store patron, or see an alternative healer</td>
<td>Access to conventional care not a deterrent to use</td>
</tr>
<tr>
<td>Eisenberg et al 1993</td>
<td>US telephone survey (n = 1539)</td>
<td>3</td>
<td>For all alternative methods: nonblack, aged 25-49 y, higher education, and higher income</td>
<td>83% Also seeing conventional MD, 72% did not inform conventional MD of alternative medicine use</td>
</tr>
<tr>
<td>Kassler et al 1991</td>
<td>University HIV clinic (114)</td>
<td>22</td>
<td>No differentiating risk factors in this population</td>
<td>20% Did not inform MD of herb use, 24% could not identify herb used, and 16% enrolled in clinical trials</td>
</tr>
</tbody>
</table>

*MD indicates medical doctor; HIV, human immunodeficiency virus.
due or pharmaceutical dosage form must be discovered as a result of undertaking the study to produce patentable and thus profitable studies.

Despite these limitations, some scientific studies are being performed. Such studies often originate in other countries where the funding constraints are not as problematic, and where regulatory authorities require some basic assessment of safety and efficacy.

With the resultant lack of solid scientific analysis in the United States, claims for benefits are thus mainly supported solely with anecdotal case reports that fail to consider the natural history of the disease or the placebo effect. Toxic effects, if any, are seldom reported.

TOXICITIES

It is important to acknowledge that all conventional drugs have potential toxicities. However, in contrast to herbal products, conventional drugs undergo trials and postapproval surveillance that define these toxicities, giving practitioners data on that to weigh risks and benefits of treatment. The therapeutic window and dosage are also defined, as are the constituents of the medicine. Because of rigorous quality control, each pill has the same ingredients as another. Adverse reactions to herbal medicines are probably underrecognized and underreported.35

Physicians should become familiar with some of the more common herbal toxicities to determine if an herb is causing a patient’s problems; the easiest way is to keep a shelf reference in the office.21,36,37 Additionally, one can seek case reports in the literature, send the remedy in question to a laboratory (at university hospital settings, call the toxicology laboratory) that can analyze a particular herb for its constituents and possible contaminants, or consult Poisonindex (a list of plants considered unsafe by the FDA is available). The FDA also posts recent warnings on herbal products on their Internet page (http://www.fda.gov). With mild toxicities, such as gastrointestinal upset or mildly elevated values on liver function tests, the physician can try stopping the herbal treatment and see if the problem resolves and consider a rechallenge for recurrence.

Table 4 outlines toxicities of some of the more popular herbs, listed by organ system.

There has been little evaluation of interactions between regulated drugs and herbs, but knowledge of some adverse reactions (and therapeutic actions) of herbal medicines can help one predict drug interactions. For example, herbs containing cardiac glycosides may potentiate effects of digoxin; herbs with diuretic effects may potentiate digoxin toxicity via potassium loss. Herbs that can cause hypertension or hypotension can interfere with prescription antihypertensive agents; hypoglycemic herbs can interfere with glycemic control in a patient with diabetes. Some herbs interfere with prescription medications by altering their metabolism. For example, Eucalyptus can induce microsomal liver enzymes while flavonoids from Echinacea purpurea are known to inhibit the cytochrome P-450 3A4 and sulfotransferase drug-metabolizing enzymes.32,53

Not only might herbal therapy be toxic, but using an herbal remedy over a proven conventional therapy can be dangerous, too. Many oncologists have seen patients with early-stage cancers who eschewed curative conventional care in favor of herbal medicines. After these herbal treatments failed, the patients returned to the oncologists with incurable metastatic diseases. In fact, studies39 have shown that patients who use herbs and other alternative therapies are more likely to abandon potentially beneficial conventional therapy when faced with an illness. Patients may also continue detrimental behaviors, such as smoking tobacco or drinking large amounts of alcohol, with the rationalization that the herbal remedy they are taking will be protective.

An herb that may be safe in small doses may become dangerous in higher doses. The risk of overdose is higher in herbal preparations than conventional medicines because of the already mentioned product variability. Consider the patient who assumed if “some is good, more is better” with respect to a copper-containing supplement he was taking. As he began to feel worse, he increased the dose. By the time he came to the attention of conventional health providers, he was unable to eat and was wasted and jaundiced, and had acquired Wilson disease.13 Patients may assume herbs such as garlic and nutmeg to be safe, as they are commonly used in cooking without adverse effect. However, herbs in extract form are often much more potent than the traditionally used form, and can be harmful (Table 3).

COMMONLY USED HERBS

Of the 20 000 available products, which is the physician most likely to encounter? A 1995 survey of 163 US health food retail stores revealed that the top 10 selling herbs were echinacea (Echinacea purpurea and angustifolia), garlic (Allium sativum), goldenseal (Hydrastis canadensis), ginseng (Asian Panax ginseng and American Panax quin-
quefolius), ginkgo (Ginkgo biloba), saw palmetto (Serenoa repens), aloe (Aloe species), ma huang (Ephedra sinica), Siberian ginseng (Eleutherococcus senticosus), and cranberry (Vaccinium macrocarpon). More recent trends suggest that St John’s wort (Hypericum perforatum), valerian (Valeriana officinalis), and feverfew (Tanacetum parthenium) will likely earn a top 10 designation when 1998 data become available.

Patients decide which herbs to use in a variety of ways. Because of the requirements that herbal medicines must not directly claim cures on the label, manufacturers have become creative with marketing. Products are given names that allude to their effects, such as “Insomnia,” “PMS,” “Sleep,” and “Get Trim.” Pamphlets, books, and other advocacy literature not subject to labeling guidelines are shelved near herbs. Patients also get information through word of mouth, encouraged by anecdotal reports from friends. An herbalist who has training in the use of plants for healing may be consulted.

Advice can be found from health food store workers. An undercover 1993 FDA study asked clerks what to buy “for my immune system,” “high blood pressure,” or “something that works on cancer.” From 129 clerks surveyed, 120 specific and highly variable recommendations were received. Phillips et al. in 1995, surveyed 20 Birmingham, Ala, area health food stores for their recommendations for AIDS. Combination products (with names like “Immunace,” “Immunaction,” or “Immunectar”) were reported frequently recommended; ginseng-containing products were recommended second (and were the most expensive). Pharmacists, on the other hand, are unlikely to give specific recommendations on herbal products sold in their stores, and say they do not know much about them. Only 5% of the US herbal market is actually sold in pharmacies.

People can also explore the Internet to discover information about herbs. Internet sources are often perceived as “published” and therefore entirely factual. However, most sites merely list herbs and their uses, few mention regulations, safety, or efficacy. Even an herb with well-known adverse effects can still be purchased.

<table>
<thead>
<tr>
<th>Organ System</th>
<th>Toxic Effects</th>
<th>Herb</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gastrointestinal</td>
<td>Hepatotoxic (from asymptomatic enzyme elevation to fulminant necrosis)</td>
<td>Chinese herbal teas[^35,36,38,39]; mistletoe[^10,35]; germander[^7-9]; chaparral[^9,45]; or comfrey[^9,36]</td>
<td>First reported case of hepatic veno-occlusive disease was caused by comfrey</td>
</tr>
<tr>
<td></td>
<td>Nausea/vomiting</td>
<td>Dandelion, garlic, ginseng, or chaparral[^9,42]</td>
<td>...</td>
</tr>
<tr>
<td></td>
<td>Diarrhea</td>
<td>Herbal teas[^36,38,41]; aloe, ligustrum, dandelion, prunella, garlic, or ginseng[^10]</td>
<td>...</td>
</tr>
<tr>
<td>Hematologic</td>
<td>Anticoagulant/antiplatelet</td>
<td>Yarrow, red clover, tang-kuei, pau d’arco, tang-kuei, or salvia[^9,12,27,46]</td>
<td>...</td>
</tr>
<tr>
<td>Central nervous system</td>
<td>Nervousness, agitation, insomnia, mood changes, depression, confusion, or hallucinations</td>
<td>Ginseng[^1^]</td>
<td>With long-term use and higher doses</td>
</tr>
<tr>
<td>Cholinergic toxicity</td>
<td></td>
<td>Jimson weed[^1^]</td>
<td>Contains atropine, scopolomine, hyoscyamine</td>
</tr>
<tr>
<td>Hallucinogenic</td>
<td></td>
<td>Catnip, hops, kava kava, khat, lobelia, mandrake, nutmeg, jimson weed, valerian, or yohimbe[^3^]</td>
<td>...</td>
</tr>
<tr>
<td>Sedation</td>
<td></td>
<td>Peony, salvia, or tang-kuei[^1^]</td>
<td>...</td>
</tr>
<tr>
<td>Pulmonary</td>
<td>Pulmonary hypertension</td>
<td>Chinese herbal teas[^3^]</td>
<td>...</td>
</tr>
<tr>
<td>Allergic/Immunologic</td>
<td>Contact dermatitis</td>
<td>Propolis, garlic, echinacea[^5^]; or melaleuca oil[^9]</td>
<td>...</td>
</tr>
<tr>
<td>Endocrinologic</td>
<td>Systemic lupus erythematosis</td>
<td>Alfalfa[^6^]</td>
<td>Contains estrogen</td>
</tr>
<tr>
<td>Gynecomastia, vaginal bleeding</td>
<td></td>
<td>Ginseng[^9]</td>
<td>Contains estrogen</td>
</tr>
<tr>
<td>Goiters, hyperthyroidism, and</td>
<td>Inhibition of iodine uptake</td>
<td>Garlic[^9]</td>
<td>Contains iodine</td>
</tr>
<tr>
<td>Hypothyroidism</td>
<td>Hypoglycemia</td>
<td>Atractyloides, scrofularia, lycium, or burdock[^10]</td>
<td>...</td>
</tr>
<tr>
<td>Renal</td>
<td>Diabetes</td>
<td>Burdock, astragalus, peony, or dandelion[^1^]</td>
<td>...</td>
</tr>
<tr>
<td>Hypertension, sodium and water retention, or hypokalemia</td>
<td>Licorice[^9,12,35]</td>
<td>Glycyrrhiza glabra, Glycyrrhiza radix can have same effects and is found in 74% of Chinese herbal teas</td>
<td>...</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>Hypotension</td>
<td>Astragalus, codonopsis, prunella, scrofularia, or salvia[^10]</td>
<td>...</td>
</tr>
<tr>
<td>Hypertension</td>
<td></td>
<td>Ginseng[^1^]</td>
<td>...</td>
</tr>
<tr>
<td>Hypertension, coronary spasm, palpitations, or tachycardia</td>
<td>Ephedra[^4^]</td>
<td>...</td>
<td></td>
</tr>
</tbody>
</table>

[^*]: Ellipses indicate not applicable.

Table 4. Reported Adverse Effects of Some Common Herbs

**Note:** This table includes reported adverse effects of some common herbs. It is important to note that these effects are not exhaustive and may vary depending on the specific herb and dosage used. Always consult with a healthcare professional before starting any new herbal supplement.
recognized toxicities, such as ephedra, may have no cautionary statement. A few sample Web sites are listed below:

- ASPET Herbal and Medicinal Plant Interest Group: A site for an herb discussion group among classic pharmacologists; also with some interesting links. Available at: http://www.faseb.org/aspet/H&MG3.htm#top.
- Botanical.com: Contains the 1931 text “A Modern Herbal,” also the “Ask Dr Well” column, who integrates Western medicine and herbs; somewhat biased toward herbs; however, with emphasis on anecdotes. Available at: http://www.botanical.com.
- Herbal Information Center: Brief overviews on common herbs; few warnings; mostly geared to sell. Available at: http://www.kcweb.com/herb/herbmain.htm.
- HerbNet: Links to other herb sites; mostly advertisements but some good information can be found. Available at: http://www.herbnet.com.
- Herbal Resource Inc: Primarily a sales site but occasionally references are noted. Biased and misleading, even stating that “there are no side effects from herbs.” Available at: http://www.herbsinfo.com.

When patients or practitioners want nonbiased information on a commonly used herb, they are advised to buy a book that bases advice on published and critically reviewed literature. A comprehensive literature search will ensure the most scientific, peer-reviewed information is being reviewed, but this process is often time consuming and, thus, impractical. Beginning in 1978, the German equivalent of the FDA went as far as to publish a series of herb recommendations, the Commission E Monographs, which detail dosages and indications for herbs whose efficacy is supported by the literature, and these have recently become available in the United States. However, the extrapolation of these European findings (usually conducted with well-characterized, pharmaceutical herbal preparations) to herbs available in the United States is complicated by the relative lack of regulatory standards in this country, as described earlier.

The great variation in US herb quality is unfortunate in light of the known pharmacological actions in humans of well-characterized botanical preparations. If one can put the question of US regulation aside, comments can thus be made on the efficacy of some of the best-selling herbs mentioned above.

Valerian (Valeriana officinalis) ranks as one of the most well characterized of the widely used herbs. Listed in The National Formulary until 1950, valerian has been described in human studies as possessing sedative and anxiolytic activity and is often combined with other sedative herbs like hops (Humulus lupulus).

In the case of Ginkgo biloba, which contains ginkgolides that antagonize platelet-activating factor, human studies were greatly facilitated by the availability of a high-quality extract (EGb 761) from the manufacturer, Willmar Schwabe, in Karlsruhe, Germany. The efficacy of Ginkgo biloba extract in improving or delaying cognitive deficits was recently demonstrated in a multicenter US trial of 309 patients with early-stage Alzheimer dementia. Improvements in 2 of 3 clinical parameters of cognitive function were observed as early as at 12 weeks of Ginkgo extract, Eg 761, when compared with placebo. Understandably, Ginkgo should be used with care in this population due to the prevalence of prescription anticoagulant therapy.

Ginseng is another widely used herb touted in Chinese traditional medicine as an “adaptogen” that allows the body to respond to physical and emotional stress. The best data to date support a role for ginseng as a vasodilator and in serving a cardioprotective role in the presence of oxygen free radicals. The mechanism of these effects is likely due to certain ginsenosides present in Panax ginseng that appear to stimulate nitric oxide synthase and increase nitric oxide production and release.

For the practicing internist, the most interesting data come from efficacy comparisons between herbs and prescription medications. For example, limited data suggest that saw palmetto compares favorably with finasteride in the management of benign prostatic hyperplasia. In treating mood disorders, St John’s wort has been shown to be equally efficacious to the older, tricyclic antidepressants. However, it should be stressed that these studies were performed with highly characterized botanical preparations under the guidance of trained physicians. The wisdom of herbal self-treatment, as is often the case in the United States, is discussed in the following section, along with more information about specific herbs the internist is likely to encounter.

PHARMACOLOGICAL BASIS FOR USE OR AVOIDANCE OF HERBAL MEDICINES

Given the previously detailed shortcomings of herbal preparations in the United States, the question arises whether any herbs possess pharmacological activity distinct from prescription or over-the-counter drugs that might therefore warrant their cautious use. Such herbs are few. The most commonly used herb in the United States and Europe, Echinacea purpurea, may be one. Unlike over-the-counter decongestants or antihistamines, alkylamide and polysaccharide constituents of echinacea possess significant in vitro and in vivo immunostimulation due to enhanced...
phagocytosis and nonspecific T-cell stimulation. However, to our knowledge, only a few clinical trials have been done with echinacea, and only a handful were well designed. One well-designed, double-blind study randomized 100 patients with acute flulike illness to an echinacea extract or placebo and showed that echinacea decreased the duration of symptoms from 10 to 7 days. Another study, with 647 students from the University of Cologne given echinacea or placebo prophylactically during flu season, showed a 15% reduction in the number of colds in the group given echinacea. Neither study used commonly available preparations of echinacea. Most herbs fall into the category of agents that share pharmacological mechanisms of action with already existing prescription or over-the-counter drugs. Based on a logical consideration of the current state of herb standardization and pharmacokinetic evaluation, the patient would be best steered toward a regulated pharmaceutical preparation capable of a predictable pharmacological response. For example, powdered ginger root has been tested in humans for prophylaxis against motion sickness compared with dimenhydrate (Dramamine). While one study reported 1.8 mg of ginger superior to 100 mg of dimenhydrate, a follow-up study failed to show any efficacy of ginger. Other examples of herbs possessing actions similar to existing, regulated drugs are feverfew for migraines, valerian for anxiety, and garlic for hypercholesterolemia.

Of greater concern to the physician is when patients use herbs with redundant pharmacological activity for diseases not recommended for self-treatment. Miller heightened the public's awareness of the antidepressant actions of St John's wort, an herb containing the potential monoamine oxidase inhibitor hypericin. While St John's wort has shown promising antidepressant action, it is unlikely that patients can make a diagnosis of endogenous depression, much less differentiate their condition from medical conditions mimicking depression. In addition, there remains concern for hypertensive reactions resulting from concomitant ingestion of high tyramine-containing foods and St John's wort, and hypericin is well known to cause photosensitivity. With St John's wort, the question is not whether the herb has therapeutic efficacy but rather issues of safety and appropriateness of the disease as a candidate for self-treatment.

Similarly, the use of saw palmetto for benign prostatic hypertrophy presents another dilemma. While hydrophobic extracts of Serenoa repens berries indeed possess 5a-reductase inhibitory and androgen receptor antagonistic activities in vitro, it is unsafe for men to self-diagnose benign prostatic hypertrophy, with the clear risk of potentiating the growth of undiagnosed prostatic carcinoma.

CONCLUSIONS

Herbal remedies are commonly used by patients who access conventional health care. Few have been shown to have beneficial effects beyond those of conventionally regulated products, and they may be costly, adulterated with dangerous additives, inherently toxic, or cause the patient to forgo potentially curative care.

All medicines can be toxic under specific circumstances; there is always a risk that an adverse reaction will present a hazard to a patient. With licensed medicines, however, regulations ensure the risk is small and monitor the medicine's efficacy, safety, and quality. No such controls over herbal medicines exist. As stated by Brown and Marcy, the hazards of self-treatment are no less serious because of the presence of similar hazards in conventional medicine.

If a patient presents with a problem that might be due to an herb, the physician should discontinue the product and watch for resolution. Reference books, Poisindex, or MEDLINE should be consulted to see if such an adverse reaction has been described. The FDA has implemented MEDWATCH, a toll-free number to which adverse effects of herbs can be reported (1-800-332-1088). If necessary, herbs can be sent to laboratories for content analysis, either to a toxicology laboratory or a pharmacology department. Botany departments at major universities can also be a source of information.

If patients ask if “herbal medicines” in general are safe or effective, they should be counseled about the lack of regulations for quality, safety, or efficacy, the differences in preparations from different manufacturers, and the lack of mechanisms for reporting adverse effects. Curious patients can be directed to read the books mentioned, and cautioned against biased information that they may receive from health food store employees, pamphlets shelved near herbs, and the Internet.

If patients mention a friend who was helped by a certain remedy or an advertisement that was seen depicting a dramatic success with a certain herb, they should be counseled on the dangers of anecdotal reports. Patients take our recommendations of conventional medicines because we suggest it, not because we present them with reams of data from randomized controlled trials; thus, it is not unexpected that their approach to the use of unconventional medicine is the same.

Patients with chronic conditions such as AIDS or cancer should also be warned that some of the adverse effects of herbas are often similar to symptoms of problems associated with their disease or treatment, thus making it difficult to discern if the disease or the “remedy” is the problem.

Classically trained physicians cannot ignore herbal medicines anymore. We must realize that patients are using herbal medicines, and insurance companies are beginning to cover the costs and are even asking us to oversee the use of herbs in certain situations. We must all become educated about these products, and at the very least know where to find information when we need it.

Asking patients about supplement use during the initial history is thus imperative. Patient disclosure of herb use may provide an opportunity for the physician to redirect the patient toward effective conventional health care. By taking a complete drug and supplement history, a dialogue can be initiated to rationally compare the appropriateness of