

Natural Choices: A Guide to Herbal and Non-herbal Medicines

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With the expanding use of herbal medicines and non-herbal dietary supplements, physicians will increasingly see patients who self-prescribe these agents, often without disclosing their use. Many patients, assuming that complementary medicines are naturally safe, combine complementary and conventional therapies, perceiving the combination to be more effective. This raises concerns about the appropriate therapeutic use, contraindications, adverse effects and drug interactions of herbal and non-herbal drugs, especially in patients with acute or chronic illness.

Recent years have seen such an explosion in the use of complementary medicine, especially herbal medicines and non-herbal nutritional supplements, that medication surveys likely underestimate their use. A 1997 U.S. community telephone survey of herbal medicine use revealed about 12% of the population used herbal medicines within the past year—an estimated increase of 380% over 1990 estimates.¹

Patient history

Documenting a patient's history of herbal medicine and non-herbal dietary supplement use is difficult. Most patients will not volunteer information on herbal and non-herbal drug use during a clinical assessment nor disclose their use in self-report written questionnaires specifically requesting this information.

Table 1

Dealing with herbal and alternative medicines

Guidelines for physicians

- When conducting a medication history, ask if your patient is taking herbal or alternative preparations; written questionnaires have shown to be ineffective.
- Herbal medications should not be used during pregnancy or breastfeeding.
- Stop all herbal products several weeks before surgery.
- Do not use herbal products in children.
- Report all suspected side-effects and drug interactions, including those due to a herbal preparation (unless they are well-recognized side-effects of the particular medication) to the appropriate regulatory agency. In Canada, use the standard Adverse Drug Reaction Report form in the Compendium of Pharmaceuticals and Specialties.

Patients should be specifically asked about herbal and non-herbal drug use or asked to bring their non-prescription drugs and supplements with them to the assessment, even if written information about such use is provided. Physician guidelines for dealing with the use of herbal or alternative medicines are presented in Table 1.

Are there contraindications?

Herbal medicines and non-herbal dietary supplements, like conventional drugs, may be contraindicated in certain situations, have adverse effects and cause drug interactions.²⁻⁶

- Many herbal agents (*i.e.*, feverfew, garlic, ginkgo biloba, ginseng) inhibit platelet-activating factor, prolonging bleeding time.
- Hepatotoxic (often fatal) and carcinogenic properties of comfrey have prompted many jurisdictions to ban its sale for internal use.
- Immunostimulant properties of echinacea may counteract immunosuppressant therapy or exacerbate autoimmune disorders such as multiple sclerosis, diabetes, lupus and asthma.
- St. John's wort and garlic induce cytochrome P450 3A4 activity and can render ineffective human immunodeficiency virus/acquired

- immune deficiency syndrome treatment with antiretroviral agents, immunosuppressant treatment of hypertension with calcium-channel blockers.
- Black cohosh and ginseng possess estrogenic activity and are contraindicated in women with estrogen-receptor positive cancers.
- Feverfew, ginseng, kava kava, ma huang, St. John's wort, valerian, yohimbine and SAME have central nervous system effects and may mimic or exacerbate psychiatric disorders when taken in overdose or following withdrawal.

Herbal and non-herbal medicines guide

In light of the potential variability of herbal products, literature reports of their therapeutic effects, adverse effects and drug interactions can only serve as a guide to their safe use. Tables 2 and 3 list the contraindications, major adverse effects and significant drug interactions for commonly used herbal medicines and non-herbal dietary supplements.

Table 2

Herbal medicines-Cont'd on page 98

Common name	Purported use	Pharmacologic effects/Drug interactions
Black cohosh	Menopausal symptoms	<ul style="list-style-type: none"> • Binds to estrogen receptors, lowers levels of luteinizing hormone. • Contraindicated in pregnancy and lactation and should be avoided by women with estrogen-dependent tumours
Chamomile	Anxiolytic, mild sedative, antispasmodic, anti-inflammatory	<ul style="list-style-type: none"> • Allergic reactions are common
Echinacea	Immunostimulant; may have spermicidal activity	<ul style="list-style-type: none"> • Reduces efficacy of immunosuppressive therapy (<i>i.e.</i>, cyclosporin, corticosteroids) • May exacerbate autoimmune disorders; avoid in patients with multiple sclerosis, tuberculosis, diabetes, asthma, leukemia, lupus, collagenosis and HIV/AIDS • Adverse effects are typical of heightened immune reactivity (<i>i.e.</i>, skin rashes, respiratory reactions, fever, hypersalivation) • Hepatotoxicity has been reported with continued use: caution with other hepatotoxic drugs, such as amiodarone, anabolic steroids, ketoconazole and methotrexate • Reduced sperm activity and possible DNA denaturation

Herbal & Non-herbal Medicines

Herbal medicines—Cont'd from page 97

Common name	Purported use	Pharmacologic effects/Drug interactions
Garlic	Antihypertensive, antihyperlipidemic	<ul style="list-style-type: none"> Inhibits platelet aggregation, may prolong bleeding time; Caution with drugs known to increase bleeding times (<i>i.e.</i>, anticoagulants, NSAIDs, platelet inhibitors) May induce cytochrome P450 3A4; caution with other drugs metabolized by cytochrome P450 3A4 Discontinue at least 7 days before surgery
Ginger	Antispasmodic, antiemetic	<ul style="list-style-type: none"> Possible mutagen and abortifacient; avoid in pregnancy Inhibits thromboxane synthesis so may prolong bleeding time Caution with drugs known to increase bleeding times (<i>i.e.</i>, anticoagulants, NSAIDs, platelet inhibitors)
Ginkgo biloba	Improve peripheral and CNS blood flow, as an artery disease and VAD	<ul style="list-style-type: none"> Inhibits platelet activation factor and prolongs bleeding time Increased risk of bleeding disorders with drugs known to increase bleeding time (<i>i.e.</i>, anticoagulants, NSAIDs, platelet associated with peripheral inhibitors); intracerebral and intraocular hemorrhage has been reported Palpitations Seizures have been reported in children; may reduce efficacy of anticonvulsants Fruit, including seeds, are poisonous and very allergenic; ingestion of fruit has resulted in loss of consciousness, seizures, death; mortality rate of 27%; ingestion of fruit also causes contact dermatitis of mucous membranes Discontinue at least 2 days before surgery
Ginseng	Promoted as physical, mental and sexual tonic immunostimulant, mood enhancer	<ul style="list-style-type: none"> Possesses estrogenic activity; contraindicated in patients with estrogen receptor-positive breast cancer; may cause estrogen-related bleeding disorders (vaginal bleeding) and breast nodules Sympathomimetic activity may cause tachycardia, hypertension, nervousness, agitation, mania and headache Has hypoglycemic and antiplatelet aggregation properties May reduce the effects of loop diuretics, antihypertensives, anxiolytics, antidepressants, mood stabilizers, antiestrogens Inhibits platelet activation factor and prolongs bleeding time; increased risk of bleeding disorders with drugs known to increase bleeding times (<i>i.e.</i>, anticoagulants, NSAIDs, platelet inhibitors) Avoid use in patients with diabetes, hypertension, anxiety disorders, bipolar disorder, or using estrogen therapy, antiestrogen therapy, anticoagulants or psychotherapeutic medications Avoid long-term use as it may be associated with GAS (<i>i.e.</i>, hypertension, nervousness, insomnia, skin eruptions, diarrhea, tremor); withdrawal syndrome (<i>i.e.</i>, hypotension, weakness, tremor) may occur on discontinuation Discontinue at least 7 days before surgery
Saw Palmetto	Treatment of symptoms of benign prostatic hyperplasia, diuretic	<ul style="list-style-type: none"> Antiandrogen and estrogen activities; avoid use in pregnancy or lactation or in children Potential to interact with hormone therapy such as hormone replacement therapy and oral contraceptives
St. John's Wort	Antidepressant for mild to moderate depression; sedative	<ul style="list-style-type: none"> Increases serotonin and norepinephrine activity, which may cause sinus tachycardia, and GI distress and may exacerbate bipolar disorder, causing mania Photosensitizer may cause sun-induced skin rash, neuropathy and possibly increased incidence of cataracts; may exacerbate photosensitivity due to tetracycline, piroxicam and phenothiazine antipsychotics Induces cytochrome P450 3A4; potential to interact with medications metabolized by this enzyme to lower drug levels and decrease therapeutic effect Induces renal P-glycoprotein drug transport systems increasing renal elimination of several drugs including digoxin and cyclosporine May induce serotonin syndrome (nausea, vomiting, dizziness, confusion, anxiety) in combination with other serotonin-activating agents (SSRIs, MAOIs, tryptophan, <i>etc.</i>) Discontinue at least 5 days before surgery

NSAID: Non-steroidal anti-inflammatory drug

CNS: Central nervous system

VAD: Vascular dementia

GAS: Ginseng abuse syndrome

GI: Gastrointestinal

SSRI: Selective serotonin reuptake inhibitor

MAOI: Monoamine oxidase inhibitor

Table 3

Non-herbal nutritional supplements

Common name	Purported use	Pharmacologic effects/Drug interactions
Chromium	Treatment of non-insulin-dependent diabetes, increased athletic performance	<ul style="list-style-type: none"> Chromium (trivalent) potentiates insulin activity Adverse effects include dermatologic conditions, gastroenteritis, pancreatitis, hepatitis, renal failure, lung carcinoma and coagulation disorders
Glucosamine	Treatment of osteoarthritis	<ul style="list-style-type: none"> Stimulates cartilage regeneration by increasing PG (a component of hyaline cartilage) synthesis and reducing PG degradation Adverse effects include nausea, diarrhea, heartburn, headache, tachycardia, insomnia, edema and skin reactions Glucosamine infusions are used to produce an animal model of insulin resistance and glucosamine-induced insulin resistance has been observed humans; diabetic patients should use glucosamine with caution
SAMe (S-adenosyl-L-methionine)	Treatment of depression, osteoarthritis, chronic liver disease	<ul style="list-style-type: none"> Is the principle endogenous methyl donor for methylation reactions Adverse effects include nausea, vomiting and diarrhea; may increase anxiety and restlessness in patients with depression, as well as mania and hypomania in patients with bipolar disorder Caution using SAMe in patients taking serotonin-enhancing drugs with bipolar or movement disorders

PG: Proteoglycan

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