
Commonly used Natural Products: What is safe?

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(The following is printed from Dr. Zhang's Power Point slides)

Change in American Health market

- ∪42% Americans use alternative med (198 million US population)
- ∪36% in 1990 to 42% in 1997
- ∪629 million visits to CAM practioners in 1997 (>> PCP)
- ∪ Herbal (12.1%, 10 million/per year), massage (11%), Chiro (11%), spiritual healing (7%), megavitamins (5.5%), energy healing (3.8%), homeopathy (3.4%), acupuncture (1%, 5 million/year).
- ∪ Back problems, allergies, fatigue, arthritis, headaches, neck problems, high BP, sprain/strain, insomnia, depression
- ∪CAM Service: \$21.1 billion and \$12.2 billion out-of-pocket in 1997
- ∪72% pt do not discuss with MDs, 89% use CAM without MD prescription

Why do patients use CAM

Physician's role in CAM uses

- ∪Protect patients against dangerous practice
- ∪Permit practices that are harmless & may assist in comfort or palliation
- ∪Promote & use those practices that proven safe & effective
- ∪ Partner with patient by communicating with them about the use of specific CAM therapies and products

Evaluation of CAM use

- ∪ Is the CAM treatment dangerous?
- ∪ Dose the CAM therapy prevent the patient from receiving needed medical conventional treatment?
- ∪ Can the CAM therapy be continued in conjunction with conventional treatment?
- ∪ Has the pt sought out CAM therapy because of distrust or bad experience with conventional medicine?
- ∪ Is conventional medicine failing the patient in some way that may be addressed by CAM?

Useful Resources

- ∪ Jonas and Levin: *Essentials of Complementary and Alternative Medicine*, 1999, Lippincott
- ∪ Anderson: *Clinician's guide to holistic medicine*, 2001, McGraw-Hill
- ∪ Edzard Ernst: *The Desktop Guide to Complementary and Alternative Medicine: an evidence-based approach*, 2001, Mosby
- ∪ PDR for herbal medicine 2ed. 1999, Medical Economics
- ∪ M. Rotblatt: *Evidence-based herbal medicine*, 2002, Hanley & Belfus, Inc
- ∪ PDR for nutritional supplements, 2002

Variety of herbal medicine in US

- ∪ Chinese Traditional—multiple herb formula
- ∪ Greek/Roman—single herbs
- ∪ Indian
- ∪ Homeopathy
- ∪ Natraceuticals
- ∪ Naturopathy
- ∪ Western herb
- ∪ Chinese herb

Most commonly used herbs in US

- ∪ Ginseng
- ∪ Ginkgo
- ∪ Green tea
- ∪ Saw palmetto
- ∪ St John's wort
- ∪ Echinacea
- ∪ Chondroitin/glucosamine
- ∪ Ginger
- ∪ Garlic
- ∪ Kava
- ∪ Valerian

Most commonly used Chinese herbs

- ∪ Bolus of six drugs (Liuwei dihuang wan)
- ∪ Antidotal decoction of coptis (Huanglian Jiedu Tang)
- ∪ Decoction of four ingredients (Siwu Tang)
- ∪ Decoction of four noble drugs (Si Junzi Tang)
- ∪ Decoction of 10 combination (Shi Quan Da Bu Tang)
- ∪ (Qi Ju Di Huang Wan)

Active chemicals in herbal medicines

Safety issues of herbal products

- ∪ Contaminants
- ∪ Herb-drug interaction
 - Pharmacokinetic
 - Pharmacodynamic
- ∪ Toxicity/adverse effects
- ∪ Adulteration
- ∪ Quality control

Contaminants found in herbs

Mercury and arsenic in TCM products

Potential herb-drug interactions

- ∪Affect absorption of conventional drugs
- ∪Interfere with coagulation
- ∪Diuretic herbs—potassium
- ∪Hypo/hypertensive herbs
- ∪Hypoglycemic herbs
- ∪Immunostimulant herbs
- ∪Phytoestrogen herbs
- ∪Sedative herbs
- ∪Stimulant herbs

Interaction with cardiac drugs

Interaction with cardiac drugs (continued)

Interaction with cardiac drugs (continued)

Interaction with anticoagulation drugs

Interaction with anticoagulation drugs (continued)

Perioperative concerns of herbal medicines

Interaction with antidiabetics

Interaction with OCP

Recommend therapeutic monitoring

Toxicity of commonly used herbs

Adverse effect reported in CAM-related RCTs

∩ Total 27 out of 121 RCTs with AE

- Herbs 22

- Vitamins 2

- TCM 2

- Pulsed electromagnetic fields 1

∩ Mean Duration 10.3 wks, mean sample size n=89

∩ Adverse effects: 17 of 565 subjects (3%)

∩ Compare to conventional (9 RCTs)

- 6 of 9 CAM has a lower AE rate over conventional

- 1 of 9 CAM has a increased AE rate

- 2 of 9 has no difference

Adulteration

PC-SPES, SPES (BotanicLab)

- PC SPES--prostate health
 - Warfarin/Coumadin
- SPES -- strengthening the immune system.
 - Alprazolam/Xanax
- BotanicLab, the manufacturer of the products, has voluntarily recalled PC SPES and SPES nationwide.
- California Department of Health Services (3/2002)

Aristolochia fangchi-induced nephropathy and carcinoma

- ∪Chinese-herb nephropathy-- weight-reducing pills containing Chinese herbs
- ∪*Stephania tetrandra* → *Aristolochia fangchi* (manufacturing error)
- ∪Terminated in Belgium in 1992
- ∪39 patients of 105 patients with Chinese-herb (*A. fangchi*) nephropathy--prophylactic surgery
- ∪ 18 cases of urothelial carcinoma , 19 mild-to-moderate urothelial dysplasia, 2 normal urothelium.
- ∪Aristolochic acid–related DNA adducts in tissues
- ∪Cumulative dose of aristolochia > 200 g with a higher risk of urothelial carcinoma.

QC issues

- ∪No government regulation
 - United States Pharmacopeia (USP)
- ∪Factors affect quality
 - Growing condition and location
 - Method of drying and grinding
 - Method of processing
 - Storage
- ∪Standardization
 - Active ingredient
 - Variation of the ingredients
 - »5-40 fold different
 - »No ingredient

Regulation

How to recommend herbal products

∪ **Products used in RTC**

- **Ginkgo GBE**

- **Ginsana**

∪ **www.ConsumerLab.com**

- **St. John's wort, ginsengs, ginkgo, saw palmetto, glucosamin, etc**

∪ **USP standards with NF label**

∪ **Pharmaceutical firms**

- **Boehringer-Pharmaton**

- **American Home Products**

∪ **Cheap ? effective**

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