Ethnobotanical Leaflets 11: 206-211. 2007.

Ethics in Herbal Medicine

Amrit Pal Singh, BAMS, PGDMB, MD (Alternative Medicine)
Herbal Consultant, Ind-Swift Ltd.
Address for Correspondence:
Dr. Amrit Pal Singh
House No: 2101 Phase-7
Mohali-160062, India
E-mail: amritpal2101@yahoo.com

Issued 12 October 2007

Introduction

Herbal system of medicine has been practiced since historical times and traces its roots to ancient civilizations. Although, we define alternative systems of healing as subjects that are not taught in medical schools, it is worthwhile to mention that before the availability of synthetic drugs, plant-based remedies formed the basis of primary healthcare system. Herbal infusion, decoction and tinctures were house-hold remedies for common ailments. In the Indian context, the house hold remedies are better known as *dadi ma ke nuskhe* (elderly formulations).

Traditional medicine includes certain health approaches and practices incorporating the use of herbs, metals or diet restrictions or life style changes, with a view to diagnose, prevent or treat diseases. Recently, the World Health Organization (W.H.O.) introduced CAM (Complementary and Alternative) health practices in various parts of the world. Broadly speaking, all systems defined under CAM come under Traditional Medicine. In other words, complementary and alternative systems are an off shoot of traditional medicine. Alternative medicine includes replacement of one system with another. Complementary health practices include adding one system of medicine as adjunct to another.

Ayurveda, Siddha, Yunani, Homeopathy, Naturopathy, Reflexology, Aromatherapy, Alexander's technique, Western Medical Herbalism and Traditional Chinese Medicine (T.C.M.) represent some popular traditional systems of medicine. All these systems have been practiced in the past with considerable success. T.C.M. has made tremendous advances in terms of modern scientific research, and according to latest studies it contributes 80 % of the annual turnover of the total herbal drug industry.

Ayurveda, Siddha, Yunani, Homeopathy, Aromatherapy, Western Medical Herbalism and Traditional Chinese Medicine are largely dependent on medicinal plants for preparing formulations. In our view, herbal medicine is a broad term covering all traditional, alternative and complementary systems of medicine utilizing plants.

Renaissance of herbal medicine

Herbal medicine is making a dramatic comeback. Studies done across the world have demonstrated increasing awareness about herbal medicine among the general population. According to World Health Organisation, majority of the people living in rural belt are dependent on medicinal plants for curing common diseases. Further, the importance of herbal medicine can be assessed by the fact that 60% of synthetic drugs have roots in medicinal plants.

Several factors are responsible for the comeback of herbal medicine. Drug resistance seems to be the prime cause. Cost-effectiveness is another factor where herbal drugs score over synthetic drugs. The efficacy of some herbal products is beyond doubt, the most recent examples being *Artemisia annua* (i.e., artemesinin: wormwood derivative used to target cancers), *Silybum marianum* (i.e., silymarin: seeds of the milk thistle effective in treating diseases of the liver) and *Taxus brevifolia* (i.e., taxols: pacific yew derivative that exhibits antimitotic activity and is used for treating refractory tumors).

At the same time, it must be argued that old sayings like 'herbal drugs are safe and can be consumed over a period of time without side-effects boast of any scientific proof. Herbal-synthetic drug interactions are major challenge for practitioners. Hepatotoxicity and nephrotoxicity associated with certain medicinal herbs pose major health problem. Post-operative bleeding associated with herbal remedies is another cause of concern.

It can be said that there is rise as well as fall in popularity of herbal medicines in recent times. Extracts/drugs prepared from medicinal plants having definite mechanism of action are respected among allopathic physicians. Herbal drugs are of much value in chronic and degenerative ailments of the body. There are many reports that some patients, after utilizing herbal formulations over a period of time feel that they are therapeutically useless. In our view, there is an obvious difference between rigorously researched product and cheaply/unethically promoted product.

Herbal clinical practice

The herbal system of medicine is alternatively known as medical herbalism or botanical medicine. Recently phytotherapy has been used as a popular alternative for plant-based formulations

In older days, knowledge of herbalism was based on experience. Hardly any work was done on documentation of plant-based remedies. Practical classes were the major weapon of acquiring knowledge on herbalism. With a passage of time, the need of documentation was felt and several texts were written. Majority of traditional systems of medicine have their own texts. These texts, once upon a time, were popularly known as Materia Medica, a term that has largely been replaced by pharmacognosy.

Herbal clinical practice is largely based on experience of an herbalist or natural medicine physician. Herbalists tend to prepare their own medicines, therefore, in the majority of cases, the patient does not know

about the nature of the drug. In Ayurvedic practice, a majority of the Ayurvedachrayas dispense there own formulations. Now the trend is changing. With major pharmaceutical companies diversifying in phyto-pharmaceuticals manufacturing, practitioners have developed interest in writing prescriptions.

Following factors may be held responsible for limitations of herbal clinical practice:

1. *Non-availability of medicines*: Herbal prescriptions range from single herb to poly-herbal formulations. In case of writing herbal prescriptions, availability of medicines is necessary. Non-availability of medicines at drug stores is another limitation of herbal/Ayurvedic practice.
2. *Expiry date on labels*: Lack of information of expiry date on the bottle is ruining herbal clinical practice. This also impacts the therapeutic efficacy of the medicine. Owing to non-availability of medicines and lack of expiry date, the CAM practitioners believe in dispensing medicines on there own.
3. *Variety of medicinal plants/drugs*: Another factor that limits the scope of herbal/CAM practice is the number of medicinal plants mentioned in respective pharmacopeias. In Ayurveda, 850 medicinal plants are actively used for creating formulations.
4. *Vague health claims*: Most of the practitioners of Ayurveda opt for allopathic practice after graduate studies. Doctors with postgraduate studies, opt for teaching professions or industry. Limited number of Ayurvedic physicians settles in urban territory. It is a sorry state of affairs that most of the people who have opened Ayurvedic/herbal clinics are professionally untrained. The situation gets complicated when 'self-styled' physicians make claims for permanently curing intractable diseases like AIDS, hepatitis and cancer. This is violation of the Magical Remedy Act.
5. *Adulterated/spurious medications:* Several reports have been published regarding mixing of synthetic drugs like corticosteroids and pain-killers in herbal prescriptions. This has harmed the belief of many people in the alternative system of medicine.

6. *Medicinal plant identification in Ayurveda:* In Ayurveda, several medicinal plants have controversial identities, and it is important to establish their proper botanical identity.

Example 1:

Let us cite the example of Ashtavarga, an important ingredient of composite Ayurvedic formulation. Ashtavarga is an important ingredient of various classical Ayurvedic formulations like Chavyanprasha. Ashtavarga has been assigned various medicinal properties by ancient Materia Medica dealing with Ayurveda. The eight plants mentioned under Ashtavarga are considered to be medicinal plants of controversial origin, despite the fact that work has been done on their botanical identity.

S.No.	Ayurvedic name	Botanical name	Family	Part used
1.	Jivaka	*Malaxis muscifera* (Lindl.) Kuntze	Orchidaceae	Bulb
2.	Rishbhaka	*Malaxis acuminta* D.Don	Orchidaceae	Pseudo-bulb
3.	Meda	*Polygonatum verticillatum* (L.) All.	Polygonaceae	Rhizome
4.	Mahameda	*Polygonatum cirrhifolium* (Wall.) Royle	Polygonaceae	Rhizome
5.	Kakoli	*Roscoea procera* Wall.	Zingiberaceae	Root
6.	Kshira-Kakoli	1. *Fritillaria royeli* Hook.f. 2. *Lilium polphyllum* D.Don	Liliaceae	Root
7.	Riddhi	*Habenaria intermedia* D.Don	Orchidaceae	Root

8.	Vriddhi	*Habenaria edgeworthii* Hook.f. ex Collett.	Orchidaceae	Root

Table 1. Eight medicinal plants used in Ashtavarga, composite Ayurvedic formulation.

Most of the Ayurvedic drugs manufacturing companies using Ashtavarga in formulations are depicting botanical name mentioned in the table. However, literature search reveals that certain medical plants of family Ascelpiadaceae are possible representatives of Kakoli, Kshira-kakoli and Meda.

S.No.	Ayurvedic name	Botanical name	Family
1.	Kakoli	*Gymnema balsamicum*	Ascelpiadaceae
2.	Kshira-kakoli	*Gymnema lactiferum* (L.) R.Br. ex Schult.	Ascelpiadaceae
3.	Meda	*Gymnema aurantiaca*	Ascelpiadaceae

Table 2. Alternative representatives of certain ingredients of Ashtavarga.

As already discussed, Chavyanprasha is a hot-selling product in the Indian market. It is considered to be panacea for treatment of chronic respiratory ailments, thanks to its tonic effect. Since Ashtavarga is a significant ingredient of Chavyanprasha, it is essential that exact plants be identified in the manufacture of the composite formulation.

Example 2:

Pashanbheda is another example worth mentioning. It is a well-known lithontriptic (stone-dissolving) drug of Ayurveda. The following plants are used as pasanbheda in different parts of India:

S.no	Botanical name	Family
1.	*Aerva lanata* Juss.ex Schult.	Amaranthaceae

2.	*Bergenia ligulata* (Wall.) Engl.	Saxifragaceae
3.	*Bridelia crenulata* Roxb.	Euphorbiaceae
4.	*Bryophyllum calycinum* Salisb.	Crassulaceae
5.	*Coleus amboinicus* Lour.	Lamiaceae
6.	*Decalepis arayalpathra* Joseph & Chandrasekharan	*Periplocaceae*
7.	*Homonoia riporia* Lour.	Euphorbiaceae
8.	*Rotula aquatica* Lour.	Boraginaceae

Table 3. Medicinal plants used for ancient drug Pasahanbheda.

7. *Lack of awareness among physicians:* Recently, several clinical trials with Ayurvedic/herbal drugs have been published in reputed journals. As an instance, guggul is widely used in Ayurveda in the treatment of obesity. Animal and human trials have suggested that guggul is useful for reducing high blood-cholesterol and triglycerides. This is perfect example of bridging the gap between traditional and modern medicine. A book like PDR should be part of all natural medicine clinics.

8. *Lack of awareness among patients:* We need to educate the patients seeking alternative medicine advice. We need to tell them categorically about the nature of herbal drugs. Herbal remedies are not magical bullets and have nothing to do with emergency conditions. However, chronic and degenerative diseases do respond to herbal remedies. While buying Ayurvedic products, the patients should always look for the label indicating 'metals with permissible limits'. They should also ensure the originality of the medication.

9. *Self-medication*: Self medication with herbal remedies is increasing becoming popular. Most of the herbal remedies like Garlic, St. John's wort, Ginkgo and Spirulina are commonly available over the counter remedies in US and UK. In India, medicinal plants used in Ayurveda are available in capsule or tablet form. This free sale should be controlled as there are increased reports of herbal-synthetic drug interactions in recent

times. The patient should always try to consult a qualified physician before consuming any medication.

10: *Bias against herbal medicine*: False propaganda against herbal medicine should be discontinued immediately. We do not wish to rebuke or promote any system of medicine. Herbal system of medicine should be accepted with an open mind and its advantages and disadvantages should be kept in mind.

Other side of herbal medicine

Herbal medicine has several advantages:

1. *Source of lead compounds*: Medicinal plants are significant source of drugs and new chemical entities (NCEs). Phytochemistry (chemical composition) and phyto-pharmacology are rapidly making progress as far as research and development is concerned. In our view, medicinal phytochemistry should be a distinct subject in syllabus of herbal medicine. Several phytochemicals have been isolated from medicinal plants and screened for applied research. Several companies maintain natural products libraries. Drugs derived from herbal source can play a significant role in future healthcare system, keeping in mind emergence of drug resistance.
2. *Cost-effectiveness*: Herbal drugs are cheaper, if readily available. Many drugs have been synthesised from intermediates obtained from plant source. Bromhexine was derived from alkaloid vasicine isolated from *Adathoda vasica* Nees.. The drug is popular anti-tussive (cough-suppressant).
3. *Side-effect profile*: Herbal remedies, if purified according to methods mentioned in pharmacopeias and prepared according to the drug formulary, are relatively non-toxic. It is generally understood herbal remedies are benign and free from side-effects. However, evidence suggests that herbal remedies may pose side –effects, if consumed without professional advice. With onset of scientific research in herbal medicine, data for side-effects of herbal is accumulating. Based on

herbal clinical practice, it can be said that side effect profile of herbals is however less as compared to synthetic drugs.

Conclusion: With increasing number of patients consulting herbal medicine practitioners, herbal clinical practice will be of more relevance in future. The need of the hour is to take herbal medicine with an open mind. Herbal product claims, supported by scientific evidence should be used in clinical practice with confidence. This will enhance the physician-patient compliance and provide the much needed support to herbal clinical practice.