**Selected Summary**

**Complementary and alternative medicine: How safe is it?**


**SUMMARY**

This article attempts to study the adverse effects of herbal agents in a semi-systematic fashion. Electronic databases (Medline, Embase, Cochrane Library and CISCOM) were searched using the key words: herbal remedies, phytomedicine, herbalism, alternative medicine, unconventional therapy, adverse effects, side-effects, dermatology, skin and allergy. The bibliographies of all the retrieved articles as well as the author's own files were scanned for further references. All articles referring to dermatological adverse effects of herbal remedies as well as systemic adverse effects of herbal remedies used for dermatological conditions were included. Where appropriate, data were extracted with emphasis on the type of remedy, type of adverse effect and likelihood of a causal relationship between them.

Adulteration of topical herbal preparations, such as creams with corticosteroids, is widely prevalent. In a large investigation with thin layer chromatography, 24% of 2609 samples of traditional Chinese remedies were found to be adulterated. Another study revealed that 8 of 11 samples contained dexamethasone. Such adulteration increases the risk of adverse effects of topical corticosteroids through inappropriate use. Reports of allergic reactions to herbal remedies are abundant in the medical literature. An aromatherapist with allergic eczema had positive patch tests to 18 different essential oils. Stevens–Johnson syndrome, a severe form of drug reaction, has been reported to occur following consumption of a health drink containing ophiopogonis tuber. The causal association was confirmed by patch tests, lymphocyte stimulation tests and a rechallenge with 1/1000 of the original dose. Photosensitivity has been reported to occur with St John's wort (used as a herbal antidepressant) and essential oils (aromatherapy). A dramatic case of a 33-year-old woman developing 70% partial thickness burns after self-administered aromatherapy has been reported. *Psoradia corylifolia* also known as *babchi*, used frequently in India for the treatment of vitiligo, contains psoralens which are known to cause photocytotoxicity. Traditional ayurvedic and Chinese herbal medicines are often contaminated with arsenic and mercury. Arsenic intoxication can cause sensory loss and muscle wasting in addition to dermatological manifestations such as Bowen's disease, arsenical keratoses and squamous cell carcinoma. Between 1972 and 1973, 74 cases of dermatological complications due to Chinese herbal medicines were reported in Singapore. Mercury poisoning can cause hyperkeratotic eczema, dryness of the skin, ulceration and erythroderma. Henna is a herbal preparation often used as a hair colouring agent. The combination of henna and para-phenylenediamine is highly toxic. Over a period of 2 years, 20 patients who developed severe angioneurotic oedema were reported in Khartoum; some of them died from renal tubular necrosis. A case report of an application of eucalyptus oil causing slurred speech, ataxia, muscle weakness and unconsciousness and another report of camphor causing seizures have been published. Chinese herbal medicines used for dermatological conditions can lead to hepatotoxicity and end-stage renal failure that may require renal transplantation.

**COMMENT**

The timing of this article could not have been more appropriate. The popularity of complementary and alternative medicine (CAM), also known as unconventional medicine, has increased in recent times. In the USA, the use of alternative therapies increased from 33.8% in 1990 to 42.1% in 1997. The estimated expenditure for alternative medicine professional services increased by 45.2% between 1990 and 1997, and was estimated at US$ 21.2 billion in 1997. CAM is not only attracting patients but has also interested physicians. A Medline search using the phrase 'Complementary medicine' for the period starting 1 January 2001 and ending 24 October 2001, produced 1496 articles. Healthcare policymakers have also awakened to the shift in trends. The Office of Alternative Medicine (OAM) in the USA was established in 1992 under pressure from CAM enthusiasts in the US Congress. It was renamed the National Center for Complementary and Alternative Medicine (NCCAM) in 1999. From US$ 2 million at the time of inception, its funding has risen to US$ 90 million in 2001.

Complementary and alternative medicine treatment modalities have been used for hundreds of years without any evaluation of their safety and efficacy. In India, the myth about ayurvedic and homoeopathic medicines being safe, efficacious and without any side-effects is so prevalent that some practitioners even advertise it to encash this belief. In an era when medical practice is increasingly becoming evidence-based, it is ironic that CAM relies on belief rather than evidence. The present analysis of the literature has revealed interesting facts about the adverse effects of herbal remedies, used as a part of CAM. Some facts in this report are alarming. Henna has a very low incidence of allergic contact dermatitis but adulteration with an undeclared amount of para-phenylenediamine increases the risk. The use of 'black henna' (*kaali mehndi*), believed to be a pure extract of henna leaves, is widespread in India. Such products may contain even higher amounts of para-phenylenediamine compared to standard hair-dye preparations. The occurrence of renal tubular necrosis leading to death after the use of henna is a shocking example. Aromatherapy causing 70% burns is another such example. These are situations in which the treatment caused more suffering to the patient than the primary disease. Most of the articles selected for analysis in this publication are case reports, from which it is difficult to estimate the incidence of adverse effects. Certainly, the most dramatic and serious adverse effects tend to get reported in the medical literature, but there might be a number of adverse effects which may not be reported or even recognized.

The author has raised the issue of a causal link between the remedy used and the adverse effects being difficult to prove in every case. However, the article has been successful in emphasizing the possibility of side-effects of CAM, an area which needs more systematic research.

In addition to the facts emphasized by the author, there are other aspects (harmful or beneficial!) of CAM which are as important as adverse effects. First, the adverse effects of CAM are not limited to dermatology, though it has been the focus of this article. Such patients can present to any specialty of medicine with varying complications. An example is the potential of herbal...
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medicines to cause complications in perioperative care, which has been reviewed elsewhere.4 Another example is the potential to cause herb–drug interactions in emergency care departments.5 Second, surveys have shown that 63%–72% of CAM therapy users did not disclose at least one type of CAM therapy to the medical doctor.6 Even when herbal medications are used, many users (patients) are unable to identify the preparations they are using and the physician is also unaware of the constituents of the preparations and their pharmacological effects. With the increasing use of CAM, the possibility of herb–drug interactions and complications of herbal medicine have also increased. It is important that physicians specifically elicit and document a history of herbal medicine use. There are several sources on the internet which provide information on herbal medicines.4

However, not all CAM may be harmful. In fact, the crude preparations that started with ‘willow bark’, ‘fox glove’ and babchi, are now salicylates, digitalis and psoralens. In a meta-analysis of placebo-controlled trials of homoeopathy, the authors concluded that ‘The results of our meta-analysis are not compatible with the hypothesis that the clinical effects of homoeopathy are completely due to placebo. However, we found insufficient evidence from these studies that homoeopathy is clearly efficacious for any single clinical condition. Further research in homoeopathy is warranted provided it is rigorous and systematic.’ Streamlining of CAM therapy is essential if its beneficial effects are to be tapped as well as to settle the issue of its efficacy and safety. Rigorous and systematic studies could provide new alternative therapies and reduce the adverse effects. The rules for practice of modern medicine or so-called allopathic medicine are getting stricter, whereas CAM has never been under strict regulations and has been practised indiscriminately. It is indeed high time that CAM is looked at through more than a looking glass!

REFERENCES


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Obituaries

Many doctors in India practise medicine in difficult areas under trying circumstances and resist the attraction of better prospects in western countries and in the Middle East. They die without their contributions to our country being acknowledged.

The National Medical Journal of India wishes to recognize the efforts of these doctors. We invite short accounts of the life and work of a recently deceased colleague by a friend, student or relative. The account in about 500 to 1000 words should describe his or her education and training and highlight the achievements as well as disappointments. A photograph should accompany the obituary.

—Editor