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Recent Trends in Herbal Medicines

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ABSTRACT
Herbal medicine is ever more popularin today's world as people take out natural remedies Herbal medicines have been used to maintain health andto treat various diseases. we are facing more challenges in the treatment of some medical conditions such as diabetes and cancer. This article provides an overview of herbal medicines and aimed to explain the therapeutic efficacy of various herbal medicines, adverse drug reactions, drug interactions, standardization and stability testing of herbal medicines, pharmacovigilance and regulatory status of herbal medicinesThis information was then compared with those in other countries with established systems in order to establish the existing inadequacies. The various efforts to document herbal medicine incorporate into mainstream healthcare and the legal framework was also reviewed.

Keywords: Herbal drugs, pharmacovigilance, standardization

I. INTRODUCTION

Herbal medicine, sometimes referred to as botanical medicine or herbalism, involves the use of plants or parts of plants, to treatinjuries or illnesses1. Herbal medicines are the study or use ofmedicinal herbs to prevent and treat diseases and ailments or to promotehealth and healing. It is a drug or preparation made from a plant orplants and used for any of such purposes. Herbal medicines are theoldest form of health care known to mankind. There are numerousherbal products available that claim to treat the symptoms of a widerange of problems, from depression to cold and flu. World HealthOrganization. (WHO) has defined herbal medicines as finished, labele medicinal products that contain active ingredients, aerial orunderground parts of the plant or other plant material or combinations. World Health Organization has set specific guidelines for theassessment of the safety, efficacy, and quality of herbal medicines.WHO estimates that 80% of the world populations presently useherbal medicine for primary health care. Exceptionally, in some countries herbal medicines may also contain by tradition, natural organicor inorganic active ingredients which are not of plant origin. Herbalmedicine is a major component in traditional medicine and a commonelement in ayurvedic, homeopathic, naturopathicand other medicinesystems. Herbals are traditionally considered as harmless since theybelong to natural sources. The use of herbal medicine due to toxicityand side effects of allopathic medicines, has led to sudden increase in the number of herbal drug manufacturers. There has been a significant increase in the proliferation and use of dietarysupplements including nutraceuticals over the past two decades. Nutraceuticalsinclude all herbal medications, medicinal foods, and vitamins. Although herbalproducts are neither prescribed nor often recommended by traditional healthcare providers, patients seeking conventional and unconventional health careare more commonly using these over-the-counter substances. There are morethan 29,000 herbal and related substances presently used or available forconsumption in the United States .

The earliest evidence of humans use of plant for healing dates back to the Neanderthal period.[10] Herbal medicinal is now being used by an increasing number of patients who typically do not report to their clinicians concomitant use, There are multiple reasons for patients turning to herbal therapies. Often cited is a "sense of control, a mental comfortfrom taking action, "which helps explain why many people taking herbs have diseases that are chronic or incurable viz. diabetes, cancer, arthritis or AIDS. In such situations, they oftenbelieve that conventional medicine has failed them. When patient use home remedies for acute, often self-limiting conditions, such as 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 environment and culture, a "man earth relationship." People believe that where an area gives rise to a particular disease, it will also

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support plants that can be used to cure it.[10] In India vast sections of the rural population have no access to modern medicine,[12] Hundred of primary health centers which are intended to serve rural areas, lack staffs,diagnostic facilities, and adequate supplies of drugs. The rural population is heavilydependent on traditional medical systems,[12] Natural plant products are perceived to be healthier than manufactured medicine,[13] Additional, report of adverse effect ofconventional medications are found in the lay press at a much higher rate than reports of herbal toxicities, in part because mechanisms to track adverse effect exist for conventional medicines whereas such data for self-treatment is harder to ascertain. Even physicians often dismiss herb as harmless placebos. Plants had been used for medicinal purposes long before recorded history. Ancient Chinese and Egyptian papyrus writings describe medicinal uses for plants as early as 3,000 BC.Indigenous cultures (such as African and Native American) used herbs in their healing rituals, while others developed traditional medical systems (such as Siddha, Ayurveda, Unani and TCM) in which herbal therapies were used.[1] The consumption of plant-based medicines and other botanicals in the West has increased manifold in recent years. About two centuries ago, our medicinal practices were largely dominated by plant-based medicines. However, the medicinal useof herbs went into a rapid decline in the West when more predictable synthetic drugs were made commonly available. In contrast, many developing nations continued to benefit from the rich knowledge of medical herbalism. For example, Siddha & Ayurveda medicines in India, Kampo Medicine in Japan, traditional Chinese medicine (TCM), and Unani medicine in the Middle East and South Asia are still used by a large majority of people.

ADVANTAGES OF HERBAL MEDICINES
- low cost
- Strength and effectiveness
- Better tolerance
- More safety
- Low side-effects
- Ready availability
- Ecofriendly.

DISADVANTAGES OF HERBAL MEDICINES
- Not able to treat sudden illness and accidents
- Risk with self dosing
- Difficulty in standardizations

TREATMENT OF DENTAL DISEASES

The plants having the dental care properties20 are Acaciacatechu, Acacia arabica, Althea officinalis, Anacyclus pyrethrum,Azardica indica, Barleria prionitis, Cinnamomun camphora,Cuminum cyminum, Eucalyptus globules, gardenia gummifera,Holarrhenia antidysenterica, Jasminum grandiflorum, Juglans regia, Mimusops elengi, Myrica sapida, Myroxylon balsamum,Ochrocarpus longifolius, Ocimum sanctum, Origanum vulgare, Piperlongum, Piper nigrum, Pistacia lentiscus, Pterocarpus marsupium,Punica granatum, Salvadora persica, Salvia officinalis, Solanumxanthocarpum, Symplocos racemosa, Syzygium aromaticum,Thalictrum foliolosum, Zanthoxylum alatum. All these regimensplays a significant role in suppressing the dental problems.

TREATMENT OF DIABETES MELLITUS

From ancient period, peoples are using herbal plants as home remedies for the treatment of diabetes 9 The various herbal plantswith antidiabetic activity are Abroma augusta, Acacia melanoxylon,Acacia modesta, Acacia nilotica, Aconitum ferox, Adhatoda vasika,Adiantum capillus, Adiantum incisum, Agrimonia eupatoria, Allium sativum, Aloe barbadensis, Althaea officinalis, Apiumgraveolens, Arctium lappa, Commiphora abyssinca, Embilicaofficinalis, Eucalyptus globules, Ginseng panax, Gymnema sylvestre,Inula helenium, Juniperus communis, Medicago sativa, Nigella sativa, Orthosiphon stamineus, Panex quinquefolius, Polygala senega,Plantago ovata, Punica granatum, Salvia officinalis, Scopariadulcis, Tanacetum vulgare, Taraxacum officinale, Tecoma stans, Trifolium alexandrinum, Trigonella foenum, Turnera diffusa,Urticadioica, Xanthium strumarium, Zea mays, Zingiber officinale.

TREATMENT OF CANCER

Medicinal plant products exhibiting anticancer activity continue to be the subject of extensive research aimed at the development of drugs for the treatment of different human tumors. The medicinal plants used for the treatment of skin cancer12 are,Acalyphafruticosa, Alangium lamarki, Catharanthus roseus, Celastruspaniculatus, Embelia ribes, Ficus glomerata, Ficus racemosa,Ocimum basilicum, Plumbago zeylanica, Terminalia chebula,Tylophora indica, Wrightia tinctoria. The extracts used for the treatment of breast cancer is Buthus martensi, Colla cornu, Herbaepimedii, Fructus lycii, Radix angelicae, Radix bupleuri,

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Rhizomacorydalis, Rhizoma curculiginis, Radix paeoniae, Radixglycyrrhizae, Scolopendra subspinipes, Squama manitis, Tubercurcumae. The herbal medicines used for treatment of pancreaticcancer is Emblica officinalis, Nigella sativa, Terminalia bellerica.

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Pharmacovigilance of Herbal Drugs

Pharmacovigilance is the science and activitiesrelating to the detection, assessment, understandingand prevention of adverse effects of drugs or anyother possible drug-related problems. Recently, itsconcerns have been widened to include: herbals,traditional and complementary medicines, bloodproducts, biological, medical devices and vaccines15.The aims of pharmacovigilance is toprotect patients from unnecessary harm byidentifying previously unrecognized drug hazards, elucidating pre-disposing factors and quantifying risk in relation to benefits16. WHO has increased its efforts to promote herbal safety monitoring within the context of the WHO International Drug MonitoringProgramme. The WHO guidelines aims to propose the member statesof a frame work for facilitating the regulation of herbal medicines usedin traditional medicine covering issues like classification, assessmentof safety, assessment of the efficacy, quality assurance,pharmacovigilance and control of advertisements of herbal medicinalproducts. The pharmacovigilance of herbal medicines exhibits particular challenges because such preparations are available from awide range of outlets typically where there is no health care professional available, most purchases are in conventional OTC environment. Various methods in pharmacovigilance are passive surveillanceincludes spontaneous reporting and stimulated reporting, active surveillance by sentinel sites, drug event monitoring, registries, comparative observational studies by survey study, case control study,targeted clinical investigations by investigate drug-drug interactionsand food-drug interactions17 The importance of genetic factors indetermining an individual susceptibility to adverse drug reactions iswell documented and this implies to herbal medicines as well as toconventional drugs. Pharmacovigilance is therefore one of the important post-marketing safety tools in ensuring the safety of pharmaceutical and related health products.

STANDARDIZATION OF HERBAL DRUGS

This involves adjusting the herbal drug preparation to a defined content of a constituent or a group ofsubstances with known therapeutic activity by adding excipients or by mixing herbal drugs or herbal drugpreparations. Botanical extracts made directly from crude plant material show substantial variation incomposition, quality, and therapeutic effects. Standardized extracts are high-quality extracts containingconsistent levels of specified compounds, and theyare subjected to rigorous quality controls during all phases of the growing, harvesting, and manufacturing processes. No regulatory definition exists for standardizationof dietary supplements. As a result, the term “standardization” may mean many different things. Somemanufacturers use the term standardization incorrectly to refer to uniform manufacturing practices, but following a recipe is not sufficient for a product to be called standardized. Therefore, the presence of the word“standardized” on a supplement label does not necessarilyindicate product quality. When the active principles are unknown, marker substances should be established for analytical purposes and standardization. Marker substances are chemically defined constituents of an herbal drug that are important for the quality of thefinished product.Ideally, the chemical markers chosen would also be the compounds that are responsible forthepharmacological effects in the body. There are two types of standardization. In the first category, “true”standardization, a definite phytochemical or group of constituents is known tohave activity. Ginkgo with its26% ginkgo flavones and 6% terpenes is a classic example. These products are highly concentrated and nolonger represent the whole herb, and are now considered as phytopharmaceuticals. In many cases

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they are vastly more effective than the whole herb. However the process may result in the loss of efficacy and thepotential for adverse effects and herb–drug interactions may increase. The other type of standardization is based onthe guarantee of the manufacturers for the presence of a certain percentage of marker compounds ,which are not indicators of therapeutic activity or quality of the herb.

Status of Herbal Medicine in India

India has a rich tradition of herbal medicine as evidentfrom Ayurveda, which could not have flourished for twothousand years without any scientific basis. Ayurveda whichliterally means knowledge (Veda) of life (Ayur) had itsbeginning in Atharvaveda (Circa 1500-1000 BC). CharakSamhita and Sushruta Samhita are the two most famoustreatises of Ayurveda several other were compiled over thecenturies such as Bela Samhita, Kashyap Samhita, AgniveshTantra, Vagbhata's Ashtang hridaya (600), Madhava Nidan(700 AD) (Lele, 1999).Vegetable products dominated IndianMeteria Medica which made extensive use of bark, leaves,flower, fruit, root, tubers and juices. The theory of rasa,vipaka, virya and prabhava formed the basis of Ayurvedapharmacology, which made no clear distinction between dietand drug, as both were vital component of treatment. Charak, Sushruta and Vagbhata described700 herbal drugs with their properties and clinical effects.Based on clinical stimulant categories of drug have beendecribed – such as appetizers, digestive stimulant, laxatives,antidiarrhea, anti-haemorrhoid, anti-emetic, anti-pyretic,anti-inflammatory, anti-pruritic, anti-asthmatic, anti-epileptic, anti-helminthic, haemoptietic, haemostatic,analgesis, sedative, promoter of life (Rasyana), promoter ofstrength, complexion, voice, semen and sperm, breast milksecretion, fracture and wound healing, destroyer of kidneystones etc .Herbal drugs are regulated under the Drug and Cosmetic Act (D and C) 1940 and Rules 1945 in India, where regulatory provisions for Ayurveda, Unani, and Siddha medicine are clearly laid down. Department ofAYUSH is the regulatory authority and mandate that any manufacture or marketing of herbal drugs have to be done after obtaining manufacturing license, as applicable.Phytotherapeutic agents are standardized herbal preparations consisting of complex mixtures of one or more plants which contain as active ingredients plant parts or plant material in the crude or processed state. Amarked growth in the worldwide phytotherapeutic market has occurred over the last 15 years. For theEuropean and USA markets alone, this will reach about$7 billion and $5 billion per annum, respectively, in 1999, and has thus attracted the interest ofmost largepharmaceutical companies. Insufficient data exist for most plants to guarantee their quality, efficacy, and safety. The idea that herbal drugs are safe and free from side effects is false. Plants contain hundreds ofconstituents and some of them are very toxic, such as the most cytotoxic anti-cancer plant-derived drugs,digitalis and the pyrrolizidine alkaloids, etc.

II. CONCLUSION

There has been a tremendous upsurge in the usage ofnutraceuticals in recent times, and the results of this studydemonstrate that patients are not informing clinical anesthesiologists prior to their elective surgery. Moreover,there is little, if any, motivation for herbal manufacturersto conduct scientific clinical trials of these products. Morethan 100 deaths, related to the use of herbs, have beenreported in the medical literature.The anesthesia literature, unfortunately, has not addressed this importantissue, although the American Society of Anesthesiologists(ASA) has recently provided some commentary on theanesthetic care of the patients who use herbal supplements. The ASA has suggested that all herbal medicinesshould be discontinued two to three weeks before an electivesurgical procedure so as to avoid potential intraoperativecatastrophic events. A detailed history of usage of herbalproducts might be recorded and made a routine part of thepreanesthetic evaluation. Future studies are warranted todevelop guidelines regarding the care and treatment ofpatients who are self-administering herbal products. Furthermore, additional studies are needed to better define thepharmacological properties of nutraceuticals and their manyderivatives, as well as their potential anestheticinteractions.

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