

A review articles on the current trends in herbal medicines

Prof. (Dr.) Mohd. Wasiullah*¹, Piyush Yadav², Sushil Yadav³, Yogesh Kumar Pandey⁴

¹Principal Dept of Pharmacy, Prasad Institute of Technology, Jaunpur (222001) UP, India

²Principal Dept of Pharmacy, Prasad Polytechnic, Jaunpur (222001) UP, India

³Assistant Professor Prasad Institute of Technology, Jaunpur (222001) UP, India

⁴Prasad Institute of Technology Institute of Technology, Jaunpur (222001) UP, India

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ABSTRACT

Herbal medicines make up an important element of the trend toward necessary medicine. Herbal medicine is getting ever more popular, in moment's world as people seek out natural remedies. Herbal medicines have been used since the dawn of civilization to maintain health and to treat various conditions.

To contend with the growing pharmaceutical request, there is urgency. To use and scientifically validate more medicinally useful herbal products. This composition provides herbal medicines and aimed to explain the remedial effectiveness of various herbal medicines, adverse drug responses, drug relations, standardization and stability testing of herbal medicines, pharmacovigilance and non-supervisory status of herbal medicines.

Keywords: Herbal medicines, standardization, stability testing, efficacy

I. INTRODUCTION

Herbal drug, occasionally appropriated as botanical medicine or herbalism, involves the use of shops or corridors of shops, to treat injuries or illnesses. Herbal drugs are the study or use of medicinal sauces to help and treat conditions and afflictions or to promote health and healing. It's a medicine or medication made from a factory or shops and used for any of similar purposes. Herbal drugs are the oldest form of health care known to mankind; there are multitudinous herbal products available that claim to treat the symptoms of a wide range of problems, from depression to cold and flu. World Health Organization (WHO) has defined herbal drugs as finished, labeled medicinal products that contain active constituents, upstan-

ding or underground corridors of the factory or other factory material or combinations. World Health Organization has set specific guidelines for the assessment of the safety, efficacy, and quality of herbal drugs. WHO estimates that of the world populations presently use herbal drug for primary health care. Exceptionally, in some countries herbal drugs may also contain, by tradition, natural organic or inorganic active constituents which aren't of factory origin. Herbal drug is a major element in traditional drug and a common element in ayurvedic, homeopathic, naturopathic and other drug systems. Herbals are traditionally considered as inoffensive since they belong to natural sources. The use of herbal drug due to toxin and side goods of allopathic drugs, has led to unforeseen increase in the number of herbal medicine manufacturers. For the once many decades, herbal drugs have been decreasingly consumed by the people without tradition. Seeds, leaves, stems, dinghy, roots, flowers, and excerpts of all of these have been used in herbal drug over the glories of their use. Herbal phrasings have reached wide adequacy as remedial agents like antimicrobial, antidiabetic, antifertility, antiageing, antiarthritic, opiate, antidepressant, anti-anxiety, antispasmodic, analgesic, anti-inflammatory, anti-HIV, vasodilatory, hepatoprotective, treatment of cirrhosis, asthma, acne, incompetence, menopause, migraine, bitterness, monuments, habitual fatigue, Alzheimer's complaint and memory enhancing activities. Herbal medicines have been proved for nearly 4000 times. These drugs have survived real world testing and thousands of times of mortal testing. Some drugs have been discontinued due to their toxin, while others have been modified or combined with fresh sauces to offset side goods. Numerous sauces have

experienced changes in their uses. Studies conducted on the saucuses and their goods keep changing their implicit uses

ADVANTAGES OF HERBAL MEDICINES

- Lower cost
- Strength and effectiveness
- More forbearance
- Further safety
- Lower side - goods
- Ready vacuity
- Ecofriendly

DISADVANTAGES OF HERBAL MEDICINES

- Not suitable to treat unforeseen illness and accidents
- threat with tone dosing
- Difficulty in standardizations

USAGE AND PREPARATION

The use of herbal drugs in the right way provides effective and safe treatment for numerous affections. The effectiveness of the herbal drugs is substantially private to the patient. The energy of the herbal drugs varies grounded on the inheritable variation of the saucuses, growing conditions of the saucuses, timing and system of harvesting of the saucuses, exposure of the saucuses to air, light and humidity, and type of preservation of the saucuses. Some of the shops that make up herbal drugs are cultivated and reused within the country and others are imported from around the world. Raw accoutrements for herbal medicines may be deduced from precisely cultivated shops or gap elected in the wild. Herbal drugs are available in several forms and frequently bear medication before their use. They can be constantly bought in bulk form as dried shops, factory corridor or approximately packed for herbal teas and decoctions. Brewing of the teas involves steeping a specified quantum of condiment in either cold or hot water for a given quantum of time. Decoctions are made by boiling the condiment in water, also straining out of the factory material. Further concentrated forms of herbal drugs are available in the form of hydroalcoholic tinctures and fluid excerpts. Styles of medication may differ beca

use of the nature of the shops active chemical ingredients.

ANALGESIC ACTIVITY

The extracts of *Bougainvillea spectabilis*, *Chelidonium majus*, *Ficus glomerata*, *Dalbergia lanceolaria*, *Glaucium grandiflorum*, *Glaucium paucilobum*, *Nepeta italic*, *Polyalthia longifolia*, *Sida acuta*, *Stylosanthes fruticosa*, *Toona ciliata*, *Zataria multiflora*, *Zingiber zerumbet* are used as analgesic agents.

ANTI-INFLAMMATORY ACTIVITY

The extracts of *Achillea millefolium*, *Artemisia vulgaris*, *Bauhinia tarapotensis*, *Curcuma longa*, *Forsythia suspension*, *Houttuynia cordata*, *Glycyrrhiza uralensis*, *Lonicera japonica*, *Ruta graveolens*, *Securidaca longipedunculata*, *Valeriana wallichii* have shown anti-inflammatory exertion.

TREATMENT OF DIABETES MELLITUS

From ancient period, peoples are using herbal shops as home remedies for the treatment of diabetes. The colorful herbal shops *Acacia modesta*, *Acacia nilotica*, *Aconitum ferox*, *Adhatoda vasika*, *Adiantum capillus*, *Adiantum incisum*, *Agrimonia eupatoria*, *Alium sativum*, *Aloe barbadensis*, *Althaea officinalis*, *Apium graveolens*, *Arctium lappa*, *Commiphora abyssinca*, *Embilica officinalis*, *Eucalyptus droplets*, *Ginseng panax*, *Gymnema sylvestre*, *Inula helenium*, *Juniperus communis*, *Medicago sativa*, *Nigella sativa*, *Orthosiphon stamineus*, *Panax quinquefolius*, *Polygala senega*, *Plantago ovata*, *Punica granatum*, *Salvia officinalis*, *Scoparia dulcis*, *Tanacetum vulgare*, *Taraxacum officinale*, *Tecoma stans*, *Trifolium alexandrinum*, *Trigonella foenum*, *Turnera diffusa*,

TREATMENT OF CANCER

Medicinal factory products flaunting anticancer exertion continue to be the subject of expansive exploration aimed at the development of medicines for the treatment of different mortal excrescences. The medicinal shops used for the treatment of skin cancer are *Acalypha fruticosa*, *Alangium lamarki*, *Catharanthus roseus*, *Celastrus paniculatus*, *Embelia ribes*, *Ficus glomerata*, *Ficus racemosa*, *Ocimum basilicum*, *Plumbago zeylanica*, *Terminalia chebula*, *Tylophora indica*, *Wrightia tinctoria*. The excerpts used for the treatment of bone cancer is *Buthus martensi*, *Colla cornu*,

Herbal epimedii, Fructus lycii, Radix angelicae, Radix bupleuri, Rhizoma corydalis, Rhizoma curculiginis, Radix paeoniae, Radix glycyrrhizae, Scolopendra subspinipes, Squama manitis, Tuber curcuma. The herbal drugs used for treatment of pancreatic cancer are Emblica officinalis, Nigella sativa, Terminalia bellerica.

TREATMENT OF DEPRESSION

Among the colorful treatment options, herbal treatment is preferable due to its nontoxic and essential mending property.,

A number of nutritive and herbal supplements have shown pledge as indispensable treatments for depression. A large number of shops have implicit functions to treat depression which are described as, Bacopa monniera, Panax quinquefolius, Piper methysticum, Rhodiola rosea, Valeriana officinalis. St. John's wort is moment most extensively known as an herbal treatment for depression. St. John's Wort is the factory species Hypericum perforatum.

TREATMENT OF PSORIASIS

Colorful natural personal formulas and medications containing botanical agents have been used to give characteristic relief in psoriasis. The colorful herbal remedies for psoriasis are, turmeric, curcumin, wolf cartilage excerpt, oregano oil, paintin g, milk, colorful antimicrobial agents Azadirachta indica, Calendula officinalis, Cassia tora, Wrightia tinctoria have been used in the operation of psoriasis.

TREATMENT OF DENTAL DISEASES

The shops having the dental care properties are Acacia catechu, Acacia arabica, Althea officinalis, Anacyclus pyrethrum, Azadirachta indica, Barleria prionitis, Cinnamomum camphora, Cuminum cyminum, Eucalyptus droplets, gardenia gummifera, Holarrhenia antidysenterica, Jasminum grandiflorum, Juglans regia, Mimusops elengi, Myrica sapida, Myroxylon balsamum, Ochrocarpus longifolius, Ocimum sanctum, Origanum vulgare, Piper longum, Piper nigrum, Pistacia lentiscus, Pterocarpus marsupium, Punica granatum, Salvadora persica, Salvia officinalis, Solanum xanthocarpum, Symplocos racemosa, Syzygium aromaticum, Thalictrum foliolosum, Zanthoxylum alatum. All these rules plays

a significant part in suppressing the dental problems

TREATMENT OF VITILIGO

Antivitiligo oil painting is an herbal remedy manufactured with potent sauces and is produced with traditional styles and, is also a complete traditional herbal expression. The shops which can be used in the treatment of vitiligo are Acorus calamus, Adiantum capillus, Boswellia serrata, Cassia angustifolia, Cassia tora, Cinnamomum cassia, Fumaria officinalis, Glycyhizza glabra, Lavandula stoechas, Psoralea cordyfolia, Pterocarpus santalinus, Rosa damascene, Sphaethanthus indicus, Tephrosia purpuria, Vitis vinifera, Zingiber officinale, Zizyphus sativa.

TREATMENT OF AGEING

Cell membranes are especially vulnerable to the aggression of free revolutionaries. When the nexus is damaged, the cell loses its capability to replicate itself. The disabled cell replication results in, the weakened vulnerable system, skin ageing, and numerous age related disorders colorful antioxidants kill the free revolutionaries and help oxidation on a cellular level. The most effective antioxidants include pine dinghy excerpt, grape seed excerpt, and blue berries, were effective against, the aggression of free revolutionaries. Some generally used sauces as antiageing agents are Allium sativum, Arnica montana, Cucumis sativum, Curcuma longa, Ficus bengalensis, Lycium barbarum, Ocimum sanctum, Panax ginseng, Prunus amygdalus, Santalum reader, Rosa damascene, Withania somnifera

TREATMENT OF FERTILI

Factory products have attracted, the attention of numerous scientists, primary source of naturally being fertility regulating agents because of their little or no side effects. The shops that have been reported to have antifertility exertion are Amaranthus retroflexus, Artabotrys odoratissimus, Barberis vulgaris, Carica papaya, Dieffenbachia seguine, Evodia rutacapra, Fatsia nightmare, Ferula assafoetida, Hibiscus rosasinensis, Lonicera ciliosa,, Magnolia virginiana, Mardenia cundurango, Pisum sativum,

Podophyllum peltatum, Punica granatum, Raphanus sativus, Rehmannia glutinosa, Semecarpus anacardium, Sesbania sesban, Stemona japonica, Thuja occidentalis, Taxus baccata, Verbena officinalis.

ADVERSE DRUG REACTIONS

Herbal remedies aren't, entirely free of adverse medicine responses. Some adverse medicine responses of generally used sauces are, robotic bleeding by Gingo biloba, gastrointestinal disturbances, antipathetic responses, fatigue, dizziness, photosensitivity, confusion by St. John's Wort, hypertension, cardiac arrhythmias, myocardial infarction, anxiety by ephedrine, headache by Paprika, diarrhea by Chast tree fruit and liver toxin by Piper methysticum.

DRUG INTERACTIONS

Cases taking medicines with a narrow remedial indicator like cyclosporine, digoxin, phenytoin, procainamide, theophylline, warfarin etc. should be discouraged from using herbal products. All medicines with narrow remedial indicator may moreover have increased adverse goods or be less effective when used in confluence with herbal products. Ginkgo is used for Alzheimer's complaint and causes increased bleeding with aspirin. Ginseng has multiple uses and causing mutualism with monoamine oxidase impediments. Kava is used as anxiolytic and shows mutualism with benzodiazepines. St. John's Wort is used as antidepressant and, causes reduced tube situations of, warfarin, cyclosporine, oral contraceptives, theophylline etc. Use of heavy essence is permitted in traditional drugs but in definite attention, which were mentioned by ancient croakers. There are now numerous exemplifications of the toxin caused by the use of heavy essence in the medications of traditional medicines. Lead, bobby, mercury, arsenic, tableware and gold that are generally added to, these medications, have, caused toxin on numerous occasions. Cases shouldn't use herbal medicines indiscriminately with ultramodern drugs, as there are possibilities of medicine relations and increased threat of adverse medicine responses

STANDARDIZATION OF HERBAL MEDICINES

Standardization is the law of conduct in order to insure the harmonious efficacy city that manufacturers should use to insure batch-to-batch thickness of their products. Standardization of herbals is a delicate process since the herbal contains complex fusions of different factors or fusions of herbals are used at times as current in different systems of drugs similar as ayurveda. In similar cases, the exact element of herbal responsible for claimed goods are unknown. The, most important aspect in, standardization, is, structure explication and confirmation of labels using physicochemical parcels similar as, melting point, boiling point, optic gyration and other pre-formulation data followed by the use of IR, NMR, MS and other largely sophisticated logical methods. GMP should also be applicable to the quality control of herbal medicines. GMP procedures should be developed for herbal drug for the safety, identity, strength, chastity and quality of herbal drugs. The quality of herbal drugs is grounded on the assessment of crude factory material, factory medications and finished products. For imported finished products, evidence of the nonsupervisory status in the country of origin should be needed. The WHO instrument scheme on the quality of the pharmaceutical products moving in transnational commerce should be applied. Internationally several pharmacopoeias have handed studies stating parameter and standard of numerous sauces and some product made out of these sauces. Several pharmacopoeias like Pharmacopoeia Committee, Chinese Herbal Pharmacopoeia, British Herbal Pharmacopoeia, British Herbal Compendium, Japanese norms for Herbal Medicine and The Ayurvedic Pharmacopoeia of India. These, pharmacopoeias lay down causerie for sauces and, herbal, products to maintain their quality in their separate nations. Government of India recommends quality parameters for colorful ayurvedic, herbal medicines. The physical and chemical stability of the product in the vessel in which it's to be retailed should be tested under definite storehouse conditions and the shelf-life should be established. The safety of herbal drugs is grounded on the toxicological

studies. The efficacy of the herbal drugs is grounded on the pharmacological and clinical goods of the active constituents. Quantitative and qualitative standardization of a polyherbal product may be using the instrumental analysis or by means of chromatography

STABILITY TESTING OF HERBAL MEDICINES

Stability testing of herbal drugs is a grueling threat, because the entire condiment or herbal product is regarded as, the active, substance, a nyhow of whether ingredients with defined remedial exertion are known. The ideal of a stability testing is to give substantiation on how the quality of the herbal products varies with the time under the influence of environmental factors similar as temperature, light, oxygen, humidity, other component or, excipient, in the lozenge form, flyspeck size, of medicine, microbial impurity, trace essence impurity, filtering from the vessel and to establish a recommended storehouse condition and shelf- life. Stability testing, is necessary to insure that, the product is, of respectable quality throughout, its entire storehouse period. Stability studies should be performed on at least three product batches of the herbal products for the proposed shelf- life, which is typically denoted as long term stability and is performed under natural atmospheric conditions. Stability data can also be generated under accelerated atmospheric conditions of temperature, moisture and light, which is appertained to as short term stability and the data so attained is used for prognosticating shelf- life of the, product. Stability testing should be conducted on the lozenge form packaged in the vessel check system proposed for marketing. With the help of ultramodern logical ways like spectrophotometer, HPLC, HPTLC and by employing proper guidelines it's possible to induce a sound stability data of herbal products and cast their shelf- life, which will help in perfecting global adequacy of herbal products

PHARMACOVIGILANCE OF HERBAL MEDICINES

Pharmacovigilance, a French term pertaining to relating side goods of medicines, their treatment, attestation, reportage and nonsupervisory opinions grounded on them, is

a well established wisdom in, the developed world., Pharmacovigilance, is, the wisdom of collecting, covering, probing, assessing and assessing information, from health care providers and cases on the adverse goods of specifics, natural products, herbal drugs and traditional medicines. Pharmacovigilance, is, a discipline involving discovery, evaluation and forestallment of undesirable goods of drugs.

It, involves covering the safety of medicine over, a period of time, identification of adverse medicine responses in, humans, access threat-benefit ratio, Safety and efficacy are, the two major enterprises about, any medicine, while efficacy can be detected with relative ease, the same can, not be said, about safety because, the adverse effect of, a medicine may be uncommon but veritably serious. This gave a birth to a new branch of pharmacology called pharmacovigilance. The points of pharmacovigilance is to cover cases from gratuitous detriment by relating preliminarily uncelebrated medicine hazards, expounding pre, disposing factors and quantifying threat in relation to benefits. The purpose of pharmacovigilance is to descry, assess, understand and to help the adverse goods or any other possible medicine-related problems, related to herbal, traditionally and reciprocal medicines. Herbal drugs are extensively used in both developed and developing countries still, in recent times, there are several high-profile herbal, safety enterprises having an impact on the public health. Herbal drugs are traditionally considered as inoffensive but, as medicinal products they bear medicine surveillance in order to identify their pitfalls. Published data shows that the threat is due either to an adulterant or to an added medicine.

Extremely limited knowledge about the ingredients of herbal drugs and their goods in humans, the lack of strict quality control and the miscellaneous nature of herbal drugs, necessitates the nonstop monitoring of the safety of these products. WHO has increased its sweats to promote herbal safety monitoring within the environment of the WHO International Drug Monitoring Programme. The WHO guidelines aims to propose the member states of a frame work for easing the regulation of herbal drugs used in traditional drug covering issues like bracket, asse

assessment, of safety, assessment of, the efficacy, quality assurance, pharmacovigilance, and control of announcements of, herbal medicinal, products. The, pharmacovigilance, of, herbal drugs exhibits particular challenges because similar medications are available from, a, wide range of outlets generally where, there's no health care professional available, most purchases are, in conventional OTC terrain. colorful styles in, pharmacovigilance, are unresistant surveillance, includes robotic reporting and stimulated reporting, active surveillance by guard spots, medicine event monitoring, registries, relative experimental studies by check study, case control study, targeted, clinical examinations by probe medicine-medicine relations and food- medicine interactions. The significance of inheritable factors in determining an individual vulnerability to adverse medicine responses is well proved and this implies to herbal drugs as well as to conventional medicines. Pharmacovigilance is thus one of the important post marketing safety tools in ensuring the safety of medicinal and affiliated health products

REGULATORY STATUS OF HERBAL MEDICINES

The legal situation of, herbal drugs varies, from country to country. Developing countries have folk knowledge of saucers and their use in traditional drug is wide spread. But, these countries do not have any, legislative criteria to include these, traditionally used, herbal drugs in medicine legislation. blessing of, herbal drugs, in utmost countries is grounded on traditional herbal references, handed they, aren't known to be unsafe when used to treat minor ailments. But, now-a-days claims are being made to treat more serious ailments with herbal drugs for which no traditional knowledge is, present, thus, non-supervisory conditions for, herbal drugs are necessary to insure the safety, efficacy and quality and, to support specific, suggestions, scientific and clinical substantiation must be acquired. Depending upon, the nature of saucers and request vacuity, different conditions live for submission of clinical trial data and toxin data. The non-supervisory conditions of herbal drugs varies from one country to other country. Some countries accept traditional, experience grounded substantiation while some consider herbal remedies as dangerous or of questionable value.

II. CONCLUSION

Medicinal saucers as implicit source of rectifiers aid has attained a significant part in health care system each over the world for mortal beings not only in the diseased condition but also as implicit material for maintaining proper health. It's clear that the herbal assiduity can make great strides in the world. With the increased use of herbal products, the unborn world wide labeling practice should adequately address quality aspects. Standardization, of, styles and quality control data, on safety and efficacy are needed, for understanding of the use of herbal medicines. A major factor impeding the development of the medicinal factory grounded diligence in, developing countries has been the lack of Information on, the social, and profitable benefits that, could be deduced from the artificial application of medicinal plants. Farther exploration is needed to exploit the composites responsible for the observed natural exertion

REFERENCES

- [1]. Winslow LC, Kroll DJ, Herbs as medicines, Archives of Internal Medicine, 158, 1998, 2192-2199.
- [2]. Gossell M, Simon OR, West ME, The past and the present use of plants for medicines, West Indian Medical Journal, 55, 2006, 217.
- [3]. De-Smet PGAM, The role of plant derived drugs and herbal medicines in health care, Drugs, 54, 1997, 801-840.
- [4]. WHO technical report series, Guidelines for the assessment of herbal medicines, 863, 1996, 178-184. 5. Abhishek K, Ashutosh M, Sinha BN, Herbal drugs-present status and efforts to promote and regulate cultivation, The Pharma Review, 6, 2006, 73-77.
- [5]. Harish P, Herbal drugs, Current Science, 81(1), 2001, 15.
- [6]. Coleman LM, Fowler LL, Williams ME, Use of unproven therapies by people with Alzheimer's disease, Journal of the American Geriatrics Society, 43, 1995, 747-750.
- [7]. Sutherland LR, Verhoef MJ, Why do patients seek a second opinion or alternative medicine, Clinical Gastroenterology, 19, 1994, 194-197.

- [8]. Catherine C, Crone MD, Thomas N, Wise MD, Use of herbal medicines among consultation-liaison populations, *The Academy of Psychosomatic Medicine*, 39(1), 1998, 3-13.
- [9]. Sehgal A, Herbal medicines-harmless or harmful, *Anesthesia*, 57, 2003, 947-948.
- [10]. Dipankar G, Laddha KS, Harbal safety and GMP: The most debatable argument in the present scenario, *The Pharma Review*, 2, 2006, 25- 29.
- [11]. Mukherjee PK, Maiti K, Mukherjee K, Houghton PJ, Leads from Indian medicinal plants with hypoglycemic potentials, *Journal of Ethnopharmacology*, 106, 2006, 1-28.
- [12]. Poul BN, Patil SS, Kadam CS, Mhaske AR, Somnath ND, Herbal drug with antidiabetic activity, *The Pharma Review*, 2, 2007, 69-72.
- [13]. Jimenez J, Hypoglycaemic activity of *Salvia lavandulifolia*, *Planta Medica*, 52, 1986, 260-262.
- [14]. Al-Awadi FM, Gumaa KA, Studies on the activity of individual plants of an antidiabetic plant mixture, *Acta Diabetologica Latina*, 24, 1987, 37-41.
- [15]. Oliver-Bever B, Zahland GR, Plant with oral hypoglycaemic activities, *Journal of Crude Drug Research*, 17, 1979, 139-196.
- [16]. Lalla JK, Herbal medicines revisited, *The Pharma Review*, 12, 2005, 101-105.
- [17]. Jeyaprakash K, Herbal therapy for depression, *Herbal Tech Industry*, 3(7), 2007, 19-25.
- [18]. Raman D, Sabitha JS, Shivanand BG, Anti-microbial activity of herbs used in psoriasis, *The Pharma Review*, 8, 2005, 71-72.
- [19]. Akhtar N, Ali M, Alam MS, Herbal drugs used in dental care, *The Pharma Review*, 10, 2005, 61-68.
- [20]. Schie AAA, Modes of action of currently known chemical antiplaque agents other than chlorohexidine, *Journal of Dental Research*, 68, 1989, 1609.
- [21]. Ansari FZ, Alam S, Jain P, Akhter S, Ansari MZH, Vitiligo and its herbal treatment, *The Pharma Review*, 12, 2008, 137-13.
- [22]. Chang RC, So KF, Use of anti-ageing herbal medicine *Lycium barbarum* against aging-associated diseases, *Cell and Molecular Neurobiology*, 28(5), 2008, 643-652.
- [23]. Khan I, Alam S, Akhter S, Shahin N, Ansari FZ, Ageing and its herbal treatment, *The Pharma Review*, 12, 2007, 131-134.
- [24]. Nandakishore D, Shubhangi G, Prakash I, Pallavi S, Parimal K, Shishupal B, Herbal plants with antifertility activity, *The Pharma Review*, 8, 2007, 131-135.
- [25]. Vikas D, Sindhu S, Swati P, Chawla A, Adverse drug reactions of herbal drugs, *Indian Academy of Clinical Medicine*, 4(4), 2003, 345-347.
- [26]. Kuhn MA, Herbal remedies: drug-herb interactions, *Critical Care Nurse*, 22, 2002, 22-32.
- [27]. Hussin AH, Adverse effects of herbs and drug herbal interactions, *Malaysian Journal of Pharmacy*, 1, 2001, 39-44.
- [28]. Chauhan VS, Standardizing herbs and intermediates- newer approaches, *The Pharma Review*, 2, 2006, 37-44.
- [29]. Wani MS, Parakh SR, Dehghan MH, Herbal medicines and its standardization, *Pharmainfo.net*, 5(6), 2007.
- [30]. Chakravarthy BK, Standardization of herbal products, *Indian Journal of Natural Products*, 9, 1993, 23-26.
- [31]. Sane RT, Standardization, quality control and GMP for herbal drugs, *Indian Drugs*, 39(3), 2002, 184-190.
- [32]. Rawat RK, Khar RK, Garg A, Development and standardization of herbal formulations, *The Pharma Review*, 6, 2007, 104.
- [33]. Thakur AK, Prasad NAV, Laddha KS, Stability testing of herbal products, *The Pharma Review*, 4, 2008, 109-112.
- [34]. Kathrin K, Eike R, Anne B, Validation of standardized high performance thin layer chromatographic methods for quality and stability testing of medicines, *Journal of AOAC International*, 86(5), 2003, 909-915.
- [35]. Manoj S, Raman S, Gupta VB, Chatterjee A, Pharmacovigilance of herbal medicines, *The Pharma Review*, 12, 2006, 119-124.
- [36]. Evans SJW, Pharmacovigilance: a science or fielding emergencies, *Statistics in Medicine*, 19, 2000, 3199-3209.

- [37]. Chan TY, Monitoring the safety of herbal medicines, *Drug Safety*, 17, 1997, 209-215.
- [38]. Ponnusankar S, Venkatesh P, Venkatesh M, Mandal SC, Mukherjee PK, Herbal drugs require pharmacovigilance study-need and reality, *The Pharma Review*, 12, 2007, 113-120.
- [39]. Kshirsagar N, The pharmacovigilance system in India, *Drug Safety*, 28, 2005, 647-650.
- [40]. Routledge P, 150 years of pharmacovigilance, *The Lancet*, 351, 1998, 1200-1201.
- [41]. Bigoniya P, Pharmacovigilance of herbal medicines: current status and future strategies, *The Pharma Review*, 5, 2009, 77-88.
- [42]. Chan TYK, Monitoring the safety of herbal medicines, *Drug Safety*, 17, 1997, 209-215.
- [43]. Sukhdev S, Arun N, Kalia AN, Patentability of herbal products: a review, *The Pharma Review*, 4, 2008, 118-124.
- [44]. Raskin L, Ribnicky DN, Komarnytsky S, Lic N, Poulev A, Borisjuk N, Plants and human health in the twenty first century, *Trends in Biotechnology*, 20(12), 2002, 522-531.
- [45]. Mukherjee PK, Exploring botanicals in Indian systems of medicine regulatory perspectives, *Clinical Research and Regulatory Affairs*, 20, 2003, 249-264.
- [46]. Calixto JB, Efficacy, safety, quality control, marketing, and regulatory guidelines for herbal medicines, *Brazilian Journal of Medical and Biological Research*, 33, 2000, 179-189.
- [47]. Verma S, Singh SP, Current and future status of herbal medicines, *Veterinary World*, 1(11), 2008, 347-350.
- [48]. Alam S, Ali R, Akhter S, Haque A, Ansari SH, Role of herbals in drug delivery system, *The Pharma Review*, 6, 2007, 106-107.
- [49]. Bhanu PS, Sagar TK, Zafer R, Failure and successes of herbal medicines, *The Indian Pharmacist*, 54(2), 2000, 221-235.