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Review article on the role of herbale medicine in health care

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ABSTRACT
The use of medicinal herbs as a potential source of therapeutic aids has gained significant importance in the healthcare system worldwide, for both humans and animals. Medicinal herbs not only help treat diseases but also aid in maintaining proper health. Research is currently underway to determine the biological activity of plants used in traditional medicine to benefit rural communities and informal settlements.Various scientific investigations aim to isolate active compounds through bioassay-guided fractionation from species that show high biological activity during screening. Several plant families, including Asteraceae, Liliaceae, Apocynaceae, Solanaceae, Caesalpinaceae, Rutaceae, Piperaceae, and Sapotaceae, have been identified as important contributors to medicinal plants.The use of medicinal plants is crucial for the development of new drugs. This article provides a review of past and current successful herbal drug approaches in preventing and treating various incurable and life-threatening diseases.

Keywords: Traditional Medicine, Biological Activity, Bioassay-Guided Fractionation.

I. INTRODUCTION:

Medicinal plants have long been recognized for their potential to provide potent therapeutic agents for a variety of health conditions. In fact, traditional medicine in many developing countries is still largely based on the use of plant and animal species for primary healthcare. Today, herbal medicines are in high demand, and their popularity is increasing day by day. Ancient literature mentions around 500 plants with medicinal use, while around 800 plants have been used in indigenous systems of medicine. Herbal drugs, which are made from whole plants or parts of plants, have been used for centuries to prevent and treat diseases and ailments or to support health and healing.

Fig.1-Herbal plant

They are considered the oldest form of healthcare known to mankind. Herbal drugs are common in ayurvedic homeopathic, naturopathic, and other medical systems. The World Health Organization has set precise guidelines for the evaluation of the safety, efficacy, and quality of herbal medicines. Herbal drugs are often considered safe because they come from natural sources. However, some plants can be toxic, and the use of herbal drugs without proper guidance can

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be risky. It is essential to ensure that herbal drugs are labeled correctly and that they contain only the appropriate plant material. While the use of herbal drugs has increased in recent years due to the toxicity and side effects of allopathic medicines, it is important to note that not all herbal drugs are safe for everyone. Herbal drugs may interact with prescription medications, and some can cause adverse effects when used in high doses or for prolonged periods. Therefore, it is essential to seek the guidance of a qualified healthcare professional before using herbal drugs.in conclusion, herbal drugs have been used for centuries to treat and prevent various health conditions. They are a vital component of traditional medicine and are increasingly being used in mainstream medicine. However, it is important to use herbal drugs with caution and under the guidance of a qualified healthcare professional to ensure their safety and efficacy.

Advantages of Herbal Drug:

- High Low/Minimum cost
- complete accessibility
- enhanced tolerance
- More protection
- fewer side-effects
- Potency and efficiency is very high

Disadvantages of Herbal Drug:

- Not able to cure rapid sickness and accidents
- Risk with self-dosing
- Complexity in standardization

Importance of plants as a source of new drugs:

Traditional medicinal systems have a long history of incorporating plants as a means of therapy, dating back to the Middle Paleolithic age around 60,000 years ago. In recent times, even developed countries have started to embrace the use of traditional medicinal systems, which involve the use of herbal drugs and remedies. According to the World Health Organization (WHO), almost 65% of the world's population has incorporated plant-based medicines into their primary modality of health care.It is interesting to note that about 25% of all drugs prescribed today are derived from plants, indicating that plant-derived drugs make up a significant segment of natural product-based pharmaceuticals. Nitrogen-containing alkaloids are one of the most important classes of secondary metabolites found in plants, contributing the largest number of drugs to the modern pharmacopoeia. Alkaloids have a diverse range of effects, from anticholinergics (atropine) to analgesics (opium alkaloids) and from antiparasitics (quinine) to anticholinesterases (galantamine) to antineoplastics (vinblastine/vincristine).Although not as abundant as alkaloids in the modern pharmacopoeia, terpenoids (including steroids) have also made significant contributions to human health. They have a wide range of effects, from Na+/K+ pump-inhibiting cardiac glycosides from Digitalis spp to antineoplastic paclitaxel and antimalarial artemisinin. Additionally, terpenoids have been found to have anti-inflammatory properties, such as the compound triptolide.Overall, the use of plant-derived medicines has a rich history and continues to play a vital role in the modern pharmaceutical industry. With ongoing research, it is likely that even more valuable compounds will be discovered in the future.

Therapeutic Activities of Herbal Drugs:

A. Anticancer activity:

Extensive research is being conducted to develop drugs for the treatment of various human tumors using medicinal plant products with anticancer activity. Several medicinal plants have been traditionally used for cancer treatment, including Acalypha fruticosa, Alangium lamarki, Catharanthus roseus, Celastrus paniculatus, Embelia ribes, Ficus glomerata, Ficus racemosa, Ocimum basilicum, Plumbago zeylanica, Terminalia chebula, Tylophora indica, and Wrightia tinctoria.For the treatment of breast cancer, herbal extracts from Buthus martensi, Colla cornu, Herba epimedii, Fructus lycii, Radix angelicae, Radix bupleuri, Rhizoma corydalis, Rhizoma curculiginis, Radix paeoniae, Radix glycyrrhizae, Scolopendra subspinipes, Squama manitis, and Tubercurcumae are used.Meanwhile, Emblica officinalis, Nigella sativa, and Terminalia bellerica are commonly used for the treatment of pancreatic cancer.The search for natural compounds with potential anticancer activity is ongoing, and these medicinal plants are promising candidates for the development of new anticancer drugs. However, more studies are needed to determine their safety and efficacy in humans.

B. Antidiabetic activity:

Numerous herbal plants have been identified for their antidiabetic properties. Some of these plants include Abroma augusta, Acacia melanoxylon, Acacia modesta, Acacia nilotica, Aconitum ferox, Adhatoda vasika, Adiantum capillus, Adiantum incisum, Agrimonia eupatoria, Allium sativum, Aloe barbadensis, Althaea

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officinalis, Apium graveolens, Arctium lappa, Commiphora abyssinica, Emblica officinalis, Eucalyptus globulus, Panax ginseng, 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, Urtica dioica, Xanthium strumarium, Zea mays, Zingiber officinale, and Annona squamosa.These herbs contain various bioactive compounds such as alkaloids, flavonoids, terpenoids, and polyphenols, which have been shown to possess antidiabetic properties. Some of these compounds act by increasing insulin sensitivity and glucose uptake by the cells, while others promote the regeneration of pancreatic beta-cells and inhibit the breakdown of insulin.Herbs such as Gymnema sylvestre, Trigonella foenum, and Panax ginseng have been found to be particularly effective in reducing blood sugar levels in diabetic patients. Other herbs like Aloe barbadensis, Allium sativum, and Punica granatum have been found to have antioxidant and anti-inflammatory properties, which can help reduce the risk of diabetic complications.In conclusion, herbal plants have been found to have a range of antidiabetic properties and can be used as alternative or complementary treatments for diabetes. However, it is essential to consult with a healthcare professional before using any herbal supplement to ensure its safety and effectiveness.

C. Analgesic activity:

These plants, namely Bougainvilla spectabilis, Chelidonium majus, Ficus glomerata, Dalbergia lanceolaria, Glaucium grandiflorum, Glaucium paucilobum, Nepeta italic, Polyalthia longifolia, Sida acuta, Stylosanthes fruticosa, Toona ciliate, Zataria multiflora, and Zingiber zerumbet, have extracts that are utilized as analgesic agents.

D. Antifertility activity:

The use of plant-based drugs as a natural source of fertility regulating agents has gained popularity due to their minimal or no side effects. Various plants have been reported to possess antifertility properties, including Amaranthus retroflexus, Artabotrys odoratissimus, Barberis vulgaris, Carica papaya, Dieffenbachia seguine, Evodia rutacapra, Fatsia horrid, Ferula assafoetida, Hibiscus rosasinensis, Lonicera ciliosa, Magnolia virginiana, Mardenia cundurango, Pisum sativum, Podophyllu peltatum, Punica granatum, Raphanus sativus, Rehmannia glutinosa, Semecarpus anacardium, Sesbania sesban, Stemona japonica, Thuja occidentalis, Taxus baccata, and Verbena officinalis.

These plants have been studied for their potential to regulate fertility, and some have shown promising results. For example, Carica papaya has been found to possess antispermatogenic and anti-implantation effects, while Punica granatum has been reported to possess antifertility activity in both males and females.Other plants, such as Amaranthus retroflexus and Sesbania sesban, have been reported to possess anti-implantation properties, while Artabotrys odoratissimus has been shown to exhibit estrogenic activity.However, it is important to note that further studies are required to determine the safety and efficacy of these plant-based drugs as fertility regulating agents. Additionally, it is crucial to ensure that the use of these plants is sustainable and does not harm the environment.In conclusion, plant-based drugs are a promising natural source of fertility regulating agents with minimal side effects. While several plants have been reported to possess antifertility properties, further research is needed to determine their safety and efficacy.

E. Antipsoriasis activity:

Psoriasis, a chronic autoimmune skin condition, can cause discomfort and embarrassment for those who suffer from it. While there is no known cure for psoriasis, various herbal remedies and preparations containing plant materials have been used to alleviate its symptoms.Turmeric and curcumin, which are derived from the turmeric plant, have shown promise in reducing inflammation and improving psoriasis symptoms. Shark cartilage extract has also been used to reduce inflammation and promote wound healing in psoriasis patients.Oregano oil, another natural remedy, has antimicrobial and anti-inflammatory properties, which may help to reduce skin irritation and inflammation associated with psoriasis. Milk thistle, a plant with antioxidant and anti-inflammatory properties, has also been used to treat psoriasis.In addition to herbal remedies, various antimicrobial agents such as Azadirachta indica (neem), Calendula officinalis (marigold), Cassia tora (sickle senna), and Wrightia tinctoria (dyer's oleander) have been used to manage psoriasis symptoms. These natural agents can help to reduce inflammation, soothe skin irritation, and promote

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wound healing in psoriasis patients.It is important to note that while herbal remedies and natural preparations can provide some relief for psoriasis symptoms, they are not a substitute for medical treatment. Anyone with psoriasis should consult a healthcare provider for proper diagnosis and treatment.

F. Antidipressive activity:

There are several nutritional and herbal supplements that have exhibited potential as alternative treatments for depression. Among them, Bacopa monniera, Panax quinquefolius, Piper methysticum, Rhodiola rosea, Valeriana officinalis, and Hypericum perforatum are some of the plants that have been identified as having potential functions in treating depression.

G. Herbs for Dental care:

There are numerous plant species that possess properties beneficial for dental care. Some of the most commonly known plants in this category include Acacia catechu, Acacia arabica, Althea officinalis, Anacyclus pyrethrum, Azadirachta indica, Barleria prionitis, Cinnamomum camphora, Cuminum cyminum, Eucalyptus globules, gardenia gummifera, Holarrhenia antidysenterica, Jasminum grandiflorum, Juglans regia, Pistacia lentiscus, Pterocarpus marsupium, Punica granatum, Salvadora persica, Salvia officinalis, Solanum xanthocarpum, Symplocos racemosa, and Syzygium aromaticum.Each of these plants offers unique properties that help suppress dental problems such as tooth decay, gum disease, and bad breath. Some of these plants are known for their antibacterial and antimicrobial properties, which help eliminate harmful bacteria in the mouth that can cause dental problems. Others contain compounds that have anti-inflammatory properties, which help reduce gum inflammation and promote healthy teeth and gums.Acacia catechu and Acacia arabica, for example, contain tannins, which help reduce inflammation and protect against gum disease. Anacyclus pyrethrum, on the other hand, has been found to possess analgesic properties, making it useful for pain relief in the mouth.Azadirachta indica, also known as neem, has been used for centuries in Ayurvedic medicine for its antibacterial properties. Its use in dental care has been found to be effective in reducing plaque buildup, preventing gum disease, and fighting bad breath.Salvadora persica, also known as the toothbrush tree, has been used for thousands of years as a natural toothbrush. Its twigs contain natural abrasives that help clean teeth and gums, and its antimicrobial properties help fight against bacteria and plaque.Overall, these plants have proven to be effective natural alternatives to traditional dental care products. Incorporating them into your oral hygiene routine can provide numerous benefits for your teeth and gums.

Future Prospects of Herbal Medicine:

It is believed that a significant proportion of herbal drugs used globally were discovered through the observation of traditional medicine practices. According to the World Health Organization (WHO), approximately 25% of modern medicines have their roots in plants that were first used in traditional medicine. Additionally, many modern medications are synthetic analogues of compounds that were originally isolated from plants. In India, around 70% of modern medicines are derived from natural sources. The proper utilization of these resources, along with modern drug discovery techniques and the coordinated efforts of various disciplines, can lead to the discovery of novel lead molecules from plants.Tribal healers in many countries frequently use ethnomedical treatments to address a wide range of ailments, including cut wounds, skin infections, swelling, aging, mental illness, cancer, asthma, diabetes, jaundice, scabies, eczema, venereal diseases, snakebite, and gastric ulcers. These healers provide instructions on how to prepare medicine from plants, but often do not keep written records. Instead, this information is passed on orally from generation to generation. The WHO has expressed great interest in documenting the use of medicinal plants by tribal communities from different parts of the world. Many developing countries have also intensified their efforts to document the ethnomedical data on medicinal plants.Research into Indian herbs to scientifically validate the claims made by tribal healers has been intensified.

II. CONCLUSION:

Herbal medicines have become increasingly important in modern healthcare systems worldwide, both for humans and animals. They are not only used in treating diseases but also for maintaining good health. To validate the claims made by traditional healers on the benefits of Indian herbs, research is being conducted to provide scientific evidence. This will help people to better understand the effectiveness of herbal

treatments and make informed decisions about their health.In order to benefit rural communities and informal settlements, it is essential to determine the biological properties of plants used in traditional medicine. Currently, many researchers are isolating active compounds from plants that have shown high biological activity during screening. By conducting bioassay-guided fractionation, these compounds can be extracted and tested for their medicinal properties. This scientific investigation can then be used to develop herbal drugs for various diseases and improve overall health status.Overall, the use of medicinal herbs has gained significant importance in the healthcare industry. With proper scientific evaluation and dissemination of information, people can make better choices regarding their health and the efficacy of herbal treatments can be better understood. By isolating and testing active compounds, researchers can develop more effective herbal drugs and improve healthcare options for all.

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