

# Comparitive Analysis of Herbal and Allopathic Treatment systems

Aminu Saleh Ahmad<sup>1</sup>, Ruchi Sharma<sup>2</sup>

<sup>1</sup>School of Pharmaceutical Sciences, Lovely Professional University, Phagwara – 144411, Punjab, India

<sup>2</sup>Faculty of Applied Medical Sciences, School of Pharmaceutical Sciences, Lovely Professional University, Phagwara – 144411, Punjab, Inda

Email: sharmamph.ruchi@gmail.com<sup>2</sup>

**ABSTRACT:** *Human beings have been using the herbal and allopathic systems of medicine since over a long time to cure, treat, diagnose and prevent diseases and ailments. In fact, herbal treatment is the oldest, traditional and cheapest medicine system that is more accessible to low income and local people. Therefore, the medicinal system has always been a supporter for people to treat and get over the problems related to health which are minor or major. Unlike, the ayurvedic medicinal system, allopathic method is more scientifically proven and developed, and more regulated. Each of the two systems has its own strengths and weaknesses. They are used to treat different ailments and at different levels and rates. Depending upon which people prefer and use one either one of the methods or combination both of the methods more than the other. This work reviews and comparatively analyzes the herbal and allopathic treatments to cure the problems in health care. It suggests the adoption of the concept of integrative medication and health care that connects mainstream allopathic medical treatment and herbal therapies and select the best, scientifically validated therapies out of the systems. Scrupulous scientific methods and clinical trials should be used to certify the quality, safety, efficacy and batch-to-batch consistency of natural medicinal products. The world should work to ensure access to affordable qualitative and safe medicines and health care.*

## 1. INTRODUCTION

### *Historical Background*

Man has been using various means to diagnose, cure, alleviate, treat, or prevent ailments and diseased conditions using natural, semi-synthetic as well as purely synthetic means of treatment [1]. A medicine is a substance used in the diagnosis, cure, mitigation, treatment, or prevention of diseases. From the ancient period, many systems of medicine have come into existence and are accepted by people from various civilizations and cultures around the world. It has been found that herbal treatment has been practiced for a long time since ancient ages. It is the medicinal system which relies on the therapeutic potential of natural sources particularly plants and various parts of plants obtained such as herbs, roots, berries, barks, flowers, leaves etc. Nowadays, herbal treatment has been widely overtaken by the allopathic system of medicine. To better explain the difference, allopathic treatment or medicine is the system which is dependent on synthetic and developed drugs [2-3]. To analyze the impact, the herbal system has been reported to be in use throughout the world by various

communities. From the traditional point of view, people from various countries have extensive record of using plants and their parts in treatment and healing rituals. These include India, Africa, Native America, Mediterranean, China and Greece [4]. The rich Indian Ayurvedic medicine, the Pun-tsoo records of the Chinese, the Hippocratic Corpus of the Greek, the Roman De Materia Medica and the Egyptian papyrus, have documented thousands of plant sources for treating ailments over many years. The Indian Ayurvedic, Siddha, Unani and homeopathy systems of medicine are some of the worlds' richest and oldest medicinal systems of treatment that involve the use of herbal medicine. This treasure of knowledge has been recorded in Sanskrit more than 4, 000 years ago. Similarly, NeiChing is a collection of medicines compiled by the Chinese Yellow Emperor in the 13<sup>th</sup> century 100 B.C. Furthermore, the medicinal plants used between 1900 to 400 BC were described by the Assyrians on 660 clay tablets (5). Although, the herbal medicine system is rich due to the widespread treasure of all kind of therapeutic agents but some of the sources have been exceptional. Few of such sources can be enlisted to scrutinize the influence on the health care system. One such agent is identified by Ancient Hindus. They extracted reserpine, an antihypertensive from the root of snakelike root of Rauwolfia serpentine plant and used it in the treatment of hypertension, insomnia, and insanity. Since its time of discovery, till now it is holding a great responsibility in providing the therapeutic activity. Another such herbal source is Cinchona bark, which was being utilized by South American Indians for treating chills and fevers. The same plant was being used by the Europeans to treat malaria [1,6].

Allopathic medicine or modern therapeutics is believed to have begun in the 1250s when foxglove plant's extract was employed to treat dropsy (congestive heart failure). Thereafter, further advancement helped the allopathic system to grow in the field of manufacturing, quality control, diagnostics and treatment. Lately, with the updation of law and regulatory authorization, the procedures and drug regulatory affairs were given preferences. Thus, it lead to progress related to quality, safety and efficiency of the system (7). The scientific advancements then made it easy to extract, analyze and refine active constituents of natural products. Later these products were improved and their synthetic and semi-synthetic drugs were synthesized made for treatment of similar or variant diseases.

The present study thus aims to explore the information related to development and comparison of the two systems of medicine. The efficacy, advantages and limitations of these systems will also be covered to understand the future perspectives. Therefore, an unbiased and appropriate conclusion is expected to be drawn from the reported researches and findings.

## **REVIEW OF LITERATURE**

### **Allopathic Medicinal System: Treatment Perspectives**

A German physician Samuel Hahnemann derived the word allopathy from two Greek terms, allos which represents other or opposite, and pathos which depicts suffering. Allopathic treatment depends upon administering the medicinal agent which generates opposite effect as that of produced by the disease [1-2]. Allopathic system of medicine relies on proven scientific tests, tools and procedures. It uses synthetic, semi-synthetic and improved drugs of known efficacy, safety and quality in treatment of ailments and diseased conditions. It lays emphasis on the specific disease affecting the body and considers good health as a condition when a person suffers no disease. The medicinal system utilizes drugs that are properly

regulated in terms of approval, usage and commercialization by various international and local regulatory agencies. It can be considered as a symptomatic system of treatment [8].

### **Herbal Medicinal System: Treatment Perspectives**

The term herbal medicine is derived from the word herb, which originally refers to the dried and fresh flowering or leafy green part of plants. But nowadays, the term is been commonly used for all parts of plants such as leaf, root, bark, flower seed, resin, etc which can be used as medicine [9] Thus, there is emergence of a whole new field of medicinal chemistry which encompasses all systems that uses parts of plants for the treatment, diagnosis, cure, mitigation or prevention of diseases. Some widespread and renowned system of medicine such as Ayurveda, Homeopathy, conventional and Chinese remedy are few examples of the same. Since allopathy has become the major conventional system of medicine worldwide, herbal medicine being its compliment or alternative is referred now as complimentary, alternative, non-conventional, non-allopathic and sometimes traditional medicine [6.8]. Because of the nature of the system, that is mostly based on experiences, beliefs and theories of indigenous people from varied cultures. It is also called botanical and phytomedicine in reference to the plant which is its main source. The formulations used in herbal medicine can further be classified based upon their class, utilization or function for e.g. herbal drugs, botanicals, nutraceuticals, dietary supplements and phytopharmaceuticals [10].

Treatment by using herbal medicine is based on holistic approach to life rather than a particular disease or ailment. It focuses on the state of equilibrium or balance within the body, mind and environment around. The reports have depicted a prevalent usage of herbal medicines all over the world for the treatment of numerous diseases. It has been found from the studies that almost 85% of the population in Africa, 75% in India and a large portion of the population in US, Europe and other parts of the world uses herbal medicine [11]. The environment, prevailing condition and geographical area determine the philosophy and practice of herbal medicine [4]. Lack of systematic approaches of assessing and demonstrating the efficacy, effectiveness, safety and quality of herbal medicine is one of the major limitations of the system [5].

The two systems: allopathic and herbal are thus, reported and used concurrently worldwide at various degrees and preferences according to their proven and perceived effectiveness, safety, cost, availability, regulation and knowledge. Each has its strengths and weaknesses, advantages and disadvantages. This work seeks to review and comparatively analyze the herbal and allopathic treatments based on a number of premises which include:

### **Concept and Approaches towards Disease Management**

Herbal medicine views the body as a whole and tries to improve the self healing ability of the body by improving its immune system. It strikes an equilibrium of methodical, natural and distinctive approach in treatment and prescription. Herbal medications are prescribed as personalized medications, so the remedies are tailored as per the requirement of individual patient. It considers every individual different from others in certain ways; be it his build, talking, decisions, behavior, or his receptiveness to diseases. So, it is high on individuality [1-2]. On the other hand, the Allopathic medicinal system believes to treat a particular disease or disorder by focusing on its symptoms. So, each disease or groups of diseases or even their side effects have a particular medicine and that is considered as the only way out of the disease or disorder. In allopathy there is little or no individualization for the patients, because the cure focuses on the disease. For example, two people suffering from flu will majorly have a common medicine [4-5].

## **Problems Associated with Safety Concerns**

Concern for the safety is one of the most important aspects of drugs discovery and use. Allopathic system of medicine involves very sophisticated process that involves very practical preclinical, clinical and post clinical investigations that check not only the efficacy and effectiveness of medicines but also the safety and potential toxicity. It involves various quality control procedures that ensures the lack of toxicity of medicinal substances before approval and use and continues to monitor their usage while in the market. These extensive researches and the strict rules and regulations ensure the safety of allopathic medicines [7].

Herbal medicine, however, is obtained from natural sources, so less side effects are expected. But few instances have been reported for the severe physical problems such as allergic reactions, liver or kidney breakdown, cancer, and even death caused by them [12]. Most of the herbal products presently in use being marketed have not been brought to a drug-approval process to express their safety and efficiency. Some of them contain mercury, lead, arsenic, corticoids and poisonous unprocessed matter in injurious amounts. Hepatic dysfunctioning and even death subsequent to the ingestion of medication has been reported [13]. Research has shown that 25% of the cases of childhood blindness in Nigeria and India is related with the employment of traditional eye medicines [4-5]. While the adverse effects of some plants have been reported, perhaps the biggest problem in Nigeria concerning herbal medicine is deficiency of standardization and few safety guidelines. The standardization of a medicine obtained from the herbal sources that may include large number of chemical constituents, with minimal or absent evidence which might be accountable for the supposed or proven beneficial response, is not an easy matter. Because of these, the public opinion of people is divided for and against the consumption of herbal medicine. Few of them agree with the safety and effectiveness, while others believe that the herbal medicines are dangerous for the health and should be properly tested before consumption [14].

## **Dosage Forms and Mode of Administration**

Indigenous cultures in Africa and around the world use herbs to minimize inflammation, manage pain, relax muscles and help in improvising digestion and elimination, as well as to enhance appetite. From the herbal bitter to the herbal soap, toothpaste, cream, and even tea, the herbal approach has been widely included in daily routine. Furthermore, it also includes various kinds of folk, unconventional and indeed any kind of therapeutic method that has been handed down by the tradition of a community or ethnic group. Herbal medicines are made available in the market in various solid, semisolid and liquid extract, even these and also sold as fresh or dried plants. They are used for chronic illnesses such as back pain, or to treat stress-related conditions which may appear very difficult to manage. Beyond the use of herbs to treat diseases, these have also been employed as health supplements to treat even sexual problems. However, this is not new in many societies. Body energizers or action pills have been with Nigerians from the time when women went about with calabash on their heads selling a powdery substance to enhance manhood, or when the Hausa/Fulani men went around with a particular root called Burantanshi or Ogun Aleko by the Yoruba herbal sellers of western Nigeria. Herbal sexual boosters are becoming increasingly popular among sexually active young adult men to boost their sexual powers [15].

Allopathic medicines are formulated in different solid, semi-solid, liquid and even gaseous dosage forms. After thorough research of the best form a medicine will be effective, the allopathic medicinal system formulate and produce drugs as tablets, capsules, granules, powders, solutions, suspensions, emulsions, sprays, injections, etc. They are administered

orally, subcutaneously, intramuscularly, by inhalation and through other various modes of administration [16].

### **The Impact and Choice of Medicinal System Globally**

Although allopathy has been the most acceptable system of medicine over the years, people are now shifting back to the utilization of herbal medicine. This is due to the following setbacks of allopathic medicine: [7-8].

- Its relief from ailments is only symptomatic
- It has serious and frustrating side effects
- It is very costly

Herbal medicine like ayurveda and homeopathy are preferred in these types of settings because of the following characteristic features:

- Less expensive and more reasonable
- Directly corresponds to the patient's beliefs
- More accessible
- Time tested
- Considered natural and safer
- Considered to have less or no side effects [17].

### **Studies and Reviews on Comparison of Herbal and Allopathic Medicine in Health Care**

Several studies and reviews have been conducted on the comparison of herbal and allopathic medicine and their use in health care.

#### **Assessment of efficiency of substituted Medicine with Allopathy in management of Oral Fungal Infection**

In a clinical study described as interventional, observational and comparative, Desai and Sharma, 2016 compared the efficacy of tea tree oil (TTO) which is a herbal medicine imitated from the paper bark tree myrtaceae, and used for over more than thousands of years by Australian Aborigines with an allopathic antifungal medicine, clotrimazole and a traditional type of therapy in the treatment of infection spreaded orally due to fungus. Thirty six enrolled healthy participants of 20-60 years of age were divided into three groups. TTO (0.25% rinsed) was given to Group I, clotrimazole was administered to Group II and Group III was given a conservative form of treatment. Four most important parameters of the oral fungal infection, lesion and subjective symptoms were clinically evaluated on periodic follow-up. Group 1with TTO was found to be more efficacious and no toxicity was reported with it. The results obtained concluded that the herbal TTO is not only a non toxic antifungal, but is also more efficient than clotrimazole as oral antifungal agent. It was also found to show a great potential as an oral health medication in healthcare [18].

#### **Assessment of Allopathic and Herbal Medicinal system for the management of Entamoeba histolytica: a Double Blind clinical Trial**

Irfanullah and Ghani 2015; designed and conducted a randomized double blind clinical trial to compare metronidazole and diloxanide furoate (MDF), a combination of allopathic drugs with a herbal medication, endemali for the cure and side effect of the human intestinal

pathogen, *Entamoeba histolytica* with the aim of finding the most appropriate drug for the killer disease. The study undertaken in two areas of Karachi Pakistan selected one hundred and seventy one patients of *Entamoeba histolytica*. They were indiscriminately allocated to two groups of eighty six and eighty five and administered the allopathic and herbal therapy respectively; however seventy eight patients in allopathic group and seventy five patients in the group related to herbal medication completed the trial.

MDF and endemali were found to be successful and equally efficacious in the treatment of intestinal amoebiasis caused by *Entamoeba histolytica*. Endemali was found to have lesser side effects than MDF from the result of the study. Around 71.30% was success rate of the two methods of treatment in this study. The study concluded that although both MDF and endemali can be used to cure *Entamoeba histolytica* caused by intestinal amoebiasis, but more research is needed to improve these medications and to find medication with higher success [19].

### **Herbal and Hepatoprotective Drugs Acting on Peptic Ulcer and Liver Disease**

Gupta and Singh, 2011 reviewed physiological and pathophysiological aspects associated to peptic ulcer and liver disease and herbal drugs used for the management of gastrointestinal ulcers. They defined peptic ulcer as an inequality between offensive and defensive gastric factors and asserts that there are bunch of herbal drugs that have good possibility to treat peptic ulcer and other gastrointestinal disorders both from conventional knowledge and scientific information. According to the review the herbal system is a grown-up system of medicine and cannot be ruled out as quackery. The fact that olden findings and credentials have through the centuries provided us with information on the expansion of life-saving drugs is another evidence of the usefulness of the herbal treatment. Astragalus, Barberry (*Barberis vulgaris*), Bilberry (*Vaccinium myrtillus*), Calendula (*Calendula officinalis*), etc are some of the herbal formulations they reviewed as being used in the treatment of peptic ulcer. They listed several herbal drugs used in the treatment of liver disease to include Liv-52, LIMARIN®, Cirrhitin, etc [20].

### **Herbs and their Interaction with Allopathic drugs**

Monish and co-authors reported on the interaction of herbal formulations with allopathic drugs. Sometimes the drugs support the effect of each other while at times undesirable effects are produced. They defined drug interaction as the effect of two or more drugs taken into the body in each other. Describing drug interaction as an important to be considered in healthcare they noted that herbal and allopathic medicines both have different pharmacokinetic and pharmacodynamic effects that may produce different therapeutic responses. They concluded that careful study needs to be carried out while taking herbal and allopathic medicines together in order to avoid potential harmful drug interactions [21-23].

### **General Awareness and comparative reputation of Allopathic, Ayurvedic and Homeopathic Systems**

Jawla et al., investigated the awareness of the systems of medicine: allopathic, ayurvedic and homeopathic and their popularity or preference among common people. The study which consisted of 500 participants also evaluated the preference for these systems regarding the treatment of some common ailments such as tooth ache, common cold, diabetes, obesity, sore throat, headache, etc and in case of medical emergency as well as the views of the participants regarding role of pharmacist and the government in promoting the use of these drugs.

The result of the study shows that although about 41% of the population has good confidence in herbal medicine, more than 50% of the population prefers allopathic medicine especially in the case of medical emergency.

## CONCLUSION

In an extensive study, the survey of the literature on ayurvedic (herbal) medicine and allopathic medicine depicted the strengths and weaknesses and suggested fusing the two to form an integrated approach that will utilize both systems in healthcare. This is because both the systems have their loopholes, but fusing their best leads to encouraging results. Emphasis is laid more to prevention in Ayurvedic medicine. Health is an indispensable asset in the life and development of individuals and countries. An efficient health care is therefore a pressing need to prevent, diagnose, treat and cure diseases and ensure the general well being of individuals and societies. With the development of human societies, different medical systems have been evolved and developed according to the need of the society. Herbal and allopathic medicinal systems are the two most common systems of medicine are used in health care for that purpose.

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