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Historical background of usage of turmeric: A review

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Abstract

Throughout human history, different products from plant are being used for various purposes. In particular, medicines obtained from plants are very useful in the health care of many cultures, in both ancient and modern times. In recent years, people prefer herbal medicines over synthetic medicines to improve their health conditions. As synthetic drugs have a high rate of adverse effects so there is a universal trend of using herbal medications or related products. In all over the world, herbs are staging a comeback. According to the World Health Organization, 75% of the world's population is using herbs for basic healthcare needs. Turmeric is known to be one of the oldest spices that have been used in India since ages. Turmeric is also known as "Indian saffron" due to its brilliant yellow color. In Ayurveda, turmeric is known for strengthening and warming the whole body. In this paper, the origin and historical background of usage of turmeric in India and the rest of the world has been discussed. This review also provides an overview of the potential health benefits of curcumin. There is need of further evaluation to be carried out on turmeric so as to explore other areas and its practical clinical applications for human beings.

Keywords: Medicines, Synthetic medicines, Turmeric, Ayurveda, Curcumin

1. Introduction

Herbal medicines contain parts of plants or other materials as active ingredients. The plant parts used in herbal medicines include seeds, berries, roots, leaves, fruits, bark, flowers, or even the whole plants. In ancient times, human beings used crude botanical material for medical needs to retain vitality and cure diseases. Indian herbal medicines or Ayurvedic medicines are used in India for traditional health care. From generations, Ayurvedic physicians made use of an extensive collection of medications based on herbs and plants. Currently, 70 percent of Indians still rely on Ayurvedic medicine for their primary health care [1]. India has almost 8% of the estimated biodiversity of the world with more than 126,000 species. There are more than 400 families of flowering plants in the world, at least 315 of these can be found in India. At present, herbal medications and its related products in the global market are derived from Chinese herbs, Indian herbs, Arabic herbs and Western herbs. Turmeric is an integral part of Indian's culture. It is used as an ingredient in curry dishes. In India, it is also used in many religious observances. It is used in the composition of many traditional remedies. Turmeric is being used in most of the Asian countries as a medicinal herb due to its anti-inflammatory properties [2]. Also Turmeric possesses anti mutagenic properties, antimicrobial properties [3, 4], antioxidant properties and anticancer properties [5, 6].

2. Botanical information and Chemical Composition of Turmeric

Turmeric (*Curcuma longa*) is a flowering plant of the ginger family, Zingiberaceae. It is rhizomatous, herbaceous and perennial plant. It reaches up to height of 1 m tall. The leaves are arranged in alternate manner and arranged in two rows. They consists of leaf sheath, petiole and leaf blade. A false stem is formed from the leaf sheaths. The leaf blades are usually 76 to 115 cm long. They have a width of 38 to 45 cm (15 to 18 in) and are oblong to elliptical in shape and narrowing at the tip. The flowers are bisexual and zygomorphic. The fruit capsule opens with three compartments. Out of around 110 species of the genus *Curcuma* L., nearly twenty species have been studied phytochemically [7]. *Curcuma longa* is the most chemically investigated species of *Curcuma*. Till date, at least 235 compounds, primarily phenolic compounds and terpenoids have been identified, including diarylheptanoids (including commonly known as curcuminoids), diarylpentaneoids, monoterpenes, sesquiterpenes, diterpenes, triterpenoids, alkaloid and sterols [8].

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3. Historical background of usage of turmeric

The exact origin of turmeric is not known. Ayurveda is an ancient Indian system of natural healing that is still practiced today. Ayurveda translates to “science of life” – ayur meaning “life” and veda meaning “science or knowledge”. Since ancient times, inhaling fumes from burning of turmeric is used to reduce congestion. Turmeric juice was used to heal wounds. Also turmeric paste was applied to all sorts of skin conditions like smallpox and chicken pox, blemishes and shingles. Ayurvedic literature contains over 100 different terms for turmeric, including jayanti, meaning “one who is victorious over diseases,” and matrimanika, meaning “as beautiful as moonlight.” It has always been considered an auspicious material in the subcontinent, both amongst the Aryan cultures and the Dravidian cultures and its value may extend far in history to the beliefs of ancient indigenous peoples. Turmeric's common name in the north is haldi which derives its name from the Sanskrit word haridra, and in the south it is called manjal, a word that is frequently used in ancient Tamil literature. Turmeric has a long history of medicinal use in South Asia and is cited in Sanskrit medical treatises and widely used in Ayurvedic and Unani systems. Susruta's Ayurvedic compendium, dating to 250 B.C., recommends an ointment containing turmeric to relieve the effects of poisoned food. Turmeric has a special place in Indian tradition and worship too. It is used to worship Sun God. It was used to worship the Sun during the solar period of India. It was mentioned in the Artharveda of India. It is also worn by people as a part of purification process. The usage of turmeric in India is documented in various forms. Turmeric was also used by Buddhists. Buddhists monks travelled to various parts of the world to dye their robes. There are also evidences that turmeric was used as a part of Chinese medicine around 1,000 years ago. In China it was mentioned in the Pent-Sao of the 7th century. Turmeric was not part of western world till recently. There have been only a few evidences stating its usage and importance in Europe. While turmeric has always been an important part of Ayurvedic system, western herbalist did not recognize its benefits till late 20th century. But by mid 20th century, turmeric started gaining popularity in western world too. Today there are numerous research studies and experiments done to identify its benefits. In 1280 AD, Marco polo refers to turmeric as Indian saffron as it was then used for dying cloths. He said that he found a plant which has all qualities of saffron but is a root. Turmeric reached China by 700 AD, East Africa by 800 AD, West Africa by 1200 AD and started becoming popular throughout the world. Chinese are using turmeric as medicine especially for the spleen, stomach and liver medicines. They use it to stimulate and purify and as an anti-biotic, anti-viral and an analgesic. At present, India is the major producer and consumer of turmeric. Other producers in Asia include Bangladesh, Pakistan, Sri Lanka, Taiwan, China, Burma (Myanmar), and Indonesia. Turmeric is also produced in the Caribbean and Latin America: Jamaica, Haiti, Costa Rica, Peru, and Brazil. It is found throughout the South and South East Asia with a few species extending to China, Australia and South Pacific. During 15th century Vasco de Gama, a Portuguese sailor, after his visit to India, introduced this spice to the West^[9]. Turmeric is considered as an essential spice throughout the world especially among the Eastern people^[10]. Apart from its use as a spice, Turmeric is also used as traditional medicine in Asian countries like India, Bangladesh and Pakistan because of its medicinal properties^[11]. Turmeric

is extensively used in Ayurveda, Unani and Siddha medicine as home remedy for various diseases^[12, 13].

4. Present scenario of cultivation and usages of Turmeric

Indian spices have strong export gains over the past five years, registering a compound annual growth rate in value of 14% in rupee terms. India is the largest producer, consumer and exporter of turmeric in the world. Indian turmeric is considered to be the best in the world market because of its high curcumin content. India accounts for about 80 per cent of world turmeric production and 60 per cent of world exports. The important States in India growing turmeric are, Andhra Pradesh, Tamil Nadu, Orissa, Maharastra, Assam, Kerala, Karnataka and West Bengal, Andhra Pradesh produces 60 per cent of total turmeric production in India followed by Tamil Nadu (13 percent) and Orissa (12 percent). Turmeric is also cultivated in China, Myanmar, Nigeria and Bangladesh. The highest cultivated area is in India, which constitutes 82 per cent followed by China (8 percent), Myanmar (4 percent), Nigeria (3 percent) and Bangladesh (3 percent). Indian turmeric is considered the best in the world. India exports turmeric to discerning countries like Japan, Sri Lanka, Iran, North African countries, US and UK. Only China exports more than 7,000 varieties of herbal products each year to more than 130 countries including berberine, angelica, licorice, Fritillaria, turmeric, frankincense, Tianma, rhubarb, Eucommia, cloves, wolfberry, Panax, fresh ginseng, and pinellia. The US Food and Drug Administration (FDA) has approved Curcuminoids as “Generally Recognized As Safe” (GRAS)^[14]. Also clinical trials have shown its good tolerability and safety profiles for human beings even at doses between 4000 and 8000 mg/day^[15] and of doses up to 12,000 mg/day of 95% concentration of curcumin, bisdemethoxycurcumin, and demethoxycurcumin^[16]. It has been shown that Turmeric has a wide range of biological actions. Some of these are its anti-inflammatory, anti-oxidant, anti-carcinogenic, anti-mutagenic, anti-coagulant, anti-fertility, anti-diabetic, anti-bacterial, anti-fungal, anti-protzoal, anti-viral, anti-fibrotic, anti-venin, anti-ulcer, hypotensive and hypocholesteremic activities^[17, 18, 19]. Nowadays, Turmeric is also being used in the formulation of cosmetics and sunscreens^[20, 21]. It has also shown that Turmeric protects against heart diseases as it lowers high blood cholesterol level and also prevent blood clotting which can lead to heart attack and stroke^[22, 23]. Also its aqueous extract has antibacterial effects^[24]. Further Curcumin present in turmeric inhibits human sperm motility and also has the potential for the development of a novel intravaginal contraceptive^[25]. It has been shown that Turmeric inhibits the growth of a variety of bacteria, pathogenic fungi and parasites. The clinical trails on chicks which were infected with Eimeria maxima suggested that diets supplemented with 1% turmeric resulted in a reduction in intestinal lesion and improved weight gain^[26]. The extract of turmeric has shown effective results in reducing inflammation and protecting the epidermal cells from the damages caused by ultraviolet B radiation^[27]. Curcumin present in turmeric protects skin against chromosomal damage caused by gamma radiation. Turmeric has potential for the prevention of Alzheimer's disease^[28, 29]. Sodium curcumin, a salt of curcumin, can prevent and treat cholelithiasis^[30]. Also it has been shown that Curcumin is a powerful scavenger of oxygen free radicals. The antioxidant activity of Curcumin is comparable to vitamin C and E.

5. Conclusion

As synthetic drugs have a high rate of adverse events; there is a universal trend of using herbal medications or related products. In all over the world, herbs are staging a comeback. According to the World Health Organization, 75% of the world's populations are using herbs for basic healthcare needs. In the Indian Ayurveda system of herbal medicine, turmeric is known for strengthening and warming effect to the whole body. Turmeric is known to be one of the oldest spices that have been used in India since ages. There is need of further evaluation to be carried out on turmeric so as to explore other areas and their practical clinical applications for human beings.

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