



Review Article

## Turmeric: The Ancient Elixir

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Received: 21/04/2015

Revised: 12/06/2015

Accepted: 20/06/2015

### ABSTRACT

Turmeric, also known as the golden spice of India, has held an important place in the medical science since the ancient times. Its medicinal properties have been studied and known for long. The awareness needs to be spread, as in the era of modern medicines, natural substances with medicinal effects are losing their significance.

**Key words:** Anticarcinogenic, Curcumin, Turmeric.

### INTRODUCTION

Turmeric, also sometimes called as the super-spice or the golden spice of life, is one of the most essential and important ingredient used in culinary all over the world. In India it has been cultivated and its health benefits are known since the ancient times. India is the major producer of turmeric in the world and also is the largest trading center of its export. Turmeric is obtained from the rhizomes of the plant *Curcuma longa*, a member of the Zingiberaceae (ginger) family. The components of turmeric are curcuminoids which include curcumin (diferuloyl methane) as the main component and also demethoxy curcumin, and bisdemethoxy curcumin. [1] Since long time turmeric has held an important and major place in the medicinal system, like the traditional Indian Ayurveda. Its use has been recognized in the

treatment of many medical problems and not just as a coloring agent in cuisines all over the world. It has been recognized to have an antioxidant, antiseptic, anti-inflammatory, and anticarcinogenic activity. [2]

#### **Nutritional composition of turmeric:**

Constituents Quantity per 100g

1. Ascorbic acid (mg) 150.0
2. Water (g) 6.0
3. Calcium (g) 0.2
4. Carbohydrate (g) 69.9
5. Fat (g) 8.9
6. Food energy (K Cal) 390.0
7. Iron (g) 47.5
8. Niacin (mg) 4.8
9. Potassium (mg) 200.0
10. Phosphorus (mg) 260.0
11. Protein (g) 8.5
12. Riboflavin (mg) 0.19
13. Sodium (mg) 30.0
14. Thiamine (mg) 0.09

The therapeutic effects of turmeric:

### **Anticarcinogenic effect**

There are various studies that show the anti-carcinogenic or anti mutagenic effect of curcumin. Curcumin inhibits carcinogenesis by acting at the three stages of cancer: tumor promotion, <sup>[3]</sup> angiogenesis, <sup>[4]</sup> and tumor growth. <sup>[5]</sup> These anticarcinogenic effects of turmeric and curcumin are due to direct antioxidant and free-radical scavenging effect with ability to indirectly increase glutathione levels, and thus helping in the hepatic detoxification of mutagens and carcinogens, and eventually inhibiting nitrosamine formation. <sup>[6,7]</sup>

### **Antimicrobial**

Turmeric extract and the essential oil of *Curcuma longa* have been found to inhibit the growth of certain bacteria, parasites, and pathogenic fungi. In some experimental studies, improvement was seen in the lesions (with the disappearance of lesions at 7 days) of dermatophyte and fungi infected guinea pigs, post application of turmeric. <sup>[8]</sup> Curcumin has been found to have some moderate activity against *Plasmodium falciparum* and *Leishmania major*. <sup>[9]</sup>

### **Cardiovascular effects**

Turmeric has been found to have beneficial and protective effect on the cardiovascular system. This includes decreasing the cholesterol and triglyceride levels, lowering the susceptibility of low density lipoprotein (LDL) to lipid peroxidation, <sup>[10]</sup> and also inhibits platelet clumping or aggregation. <sup>[11]</sup> The decreasing effect on cholesterol has been attributed to decreased cholesterol uptake in the intestines and increase conversion of cholesterol to bile acids in the liver. <sup>[12]</sup>

### **Antioxidant**

Curcumin is a strong antioxidant and thus protects against free radical damage. <sup>[13]</sup> The extracts of turmeric (both water and fat soluble) and its curcumin component have been found to exhibit strong antioxidant

activity which is comparable to that of vitamins C and E. <sup>[14]</sup>

### **Peptic ulcer disease**

Curcumin plays a significant role in the healing of gastric/peptic ulcers with no significant adverse reactions or abnormalities. <sup>[15]</sup>

### **Anti-inflammatory**

Turmeric use helps to reduce inflammation by lowering histamine levels and also possibly by increasing the production of natural cortisone by the adrenal glands. <sup>[16]</sup> Oral administration of curcumin was found to be as effective as cortisone or phenylbutazone, in cases of acute inflammation, but half as effective in cases of chronic inflammation. <sup>[17]</sup> This anti-inflammatory property is attributed to its ability to inhibit the biosynthesis of inflammatory prostaglandins from arachidonic acid and also inhibition of neutrophil function during inflammatory states. <sup>[17]</sup>

### **Antiplatelet aggregation**

Curcumin prevents clumping of platelets, which helps to improve circulation. This inhibition of platelet aggregation has been attributed to the possible potentiation of prostacyclin synthesis and inhibition of thromboxane synthesis by curcumin. <sup>[11]</sup>

### **Hepatoprotective**

Turmeric's hepatoprotective effect has been found to be due to a result of its antioxidant properties and its ability to decrease the formation of proinflammatory cytokines. <sup>[18]</sup> Curcumin has been found to have choleric activity, so it increases bile output and solubility and is therefore plays a role in the treatment of cholelithiasis. <sup>[12]</sup> It has also been found to be effective in the prevention of liver cirrhosis. <sup>[19]</sup>

## **CONCLUSIONS**

Turmeric represents the ancient elixir with its magnificent healing properties.

More research studies and awareness are needed to create awareness of its medicinal properties to be utilized by the human race.

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How to cite this article: Rawal G, Yadav S, Shokeen P, et. al. Turmeric: the ancient elixir. *Int J Health Sci Res.* 2015; 5(7):380-383.

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