

Turmericine: The Healing herb

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Abstract: Turmeric, the golden herb has been in use since time immemorial. The recent resurgence in interest in this herb has led to its tremendous use in multiple ailments. Scientific evidence has been gathering gradually with dental applications have come to light only recently. This article suggests the possible mechanism of action and probable potential uses of turmeric in recent time and coming future.

Keywords: Curcuma, Curcumin, Indigenous medicine, Traditional medicine, Turmeric extract

I. Introduction

From the grandmother's kitchen to the home remedies, ayurvedic herbs has proven their worth since long. One of the most used condiment that is also used as a "healer" in Indian subcontinent is Turmeric¹. Turmeric is a product of *Curcuma longa*, a rhizomatous herbaceous perennial plant belonging to the ginger family Zingiberaceae, which is native to tropical South Asia. Turmeric, also known as "spice of life" or "golden spice" holds an irreplaceable position in the sociocultural lives of people of Indian subcontinent. This "earthy herb of sun" with golden yellow rhizome was regarded as the herb of sun by the vedic age people and its name turmeric has been derived from the Latin word *terra merita* (meritorious earth), referring to the color of ground turmeric, which resembles a mineral pigment. It is known as *terre merite* in French and simply as "yellow root" in many languages. In many cultures, its name is also based on the Latin word "*curcuma*". As many as 133 species of *Curcuma* have been identified worldwide. The earliest reference of turmeric can be seen in Atharvaveda where it is said to be a cure for jaundice. Curcumin is a multi-functional and pharmacologically safe natural agent. It is the principal curcuminoid of turmeric.

II. In Traditional Medicine

In Ayurvedic medicine, turmeric is a well-documented treatment for various respiratory conditions (e.g., asthma, bronchial hyperactivity, and allergy), as well as for liver disorders, anorexia, rheumatism, diabetic wounds, runny nose, cough, and sinusitis ([Araujo and Leon 2001](#)).

In traditional Chinese medicine, it is used to treat diseases associated with abdominal pain ([Aggarwal, Ichikawa, and Garodia 2004](#)). From ancient times, as prescribed by Ayurveda, turmeric has been used to treat sprains and swelling ([Araujo and Leon 2001](#)). In both Ayurvedic and traditional Chinese medicine, turmeric is considered a bitter digestive and a carminative.

Unani practitioners also use turmeric to expel phlegm or *kapha*, as well as to open blood vessels in order to improve blood circulation. It can be incorporated into foods, including rice and bean dishes, to improve digestion and reduce gas and bloating. It is a cholagogue, stimulating bile production in the liver and encouraging excretion of bile via the gallbladder, which improves the body's ability to digest fats.

III. In Day To Day Practice:

Turmeric is thought to have many medicinal properties including strengthening the overall energy of the body, relieving gas, dispelling worms, improving digestion, regulating menstruation, dissolving gallstones, and relieving arthritis. Many South Asian countries use it as an antiseptic for cuts, burns, and bruises. In Pakistan, it is frequently used as an anti-inflammatory agent, and as a remedy for gastrointestinal discomfort associated with irritable bowel syndrome and other digestive disorders while Afghan people use turmeric to cleanse wounds and stimulate their recovery by applying it on a piece of burnt cloth that is placed over a wound. Indians use turmeric to purify blood and as a remedy for skin conditions. Turmeric paste is used by women in some parts of India to remove superfluous hair and is also applied to the skin of the bride and groom before marriage in some parts of Indian subcontinent, where it is believed to make the skin glow and keep harmful

bacteria away from the body. Turmeric is also used mixed with hot milk to get rid of common cold and sore throat in some parts of India. It is currently used in the formulation of several sunscreens and face creams.

IV. Mechanism Of Action:

Throughout the Orient, turmeric is traditionally used for both prevention and therapy of diseases. Modern *in vitro* studies reveal that turmeric is a potent antioxidant, anti-inflammatory, antimutagenic, antimicrobial, and anticancer agent. Extensive scientific research on curcumin, a natural compound present in the rhizomes of Plant *Curcuma Longa* Linn., demonstrated its anti-inflammatory action.

Curcumin was found to inhibit arachidonic acid metabolism, cyclooxygenase, lipoxygenase, cytokines (Interleukins and tumor necrosis factor), Nuclear factor- κ B, and release of steroidal hormones. Curcumin was reported to stabilize the lysosomal membrane and cause uncoupling of oxidative phosphorylation besides having a strong oxygen radical scavenging activity, which was responsible for its anti-inflammatory property. Srivastava et al demonstrated that curcumin inhibited the incorporation of arachidonic acid (AA) into platelet phospholipids and inhibited the deacylation of AA-labelled phospholipids (liberation of free AA) on stimulation with calcium ionophore A23187.^{2,3} Curcumin reduces pro-inflammatory leukotriene synthesis via inhibition of LOX enzyme^{4,5}.

Flynn et al studied the inhibitory activities of curcuminoids and yakuchinones on the 5-hydroxy-eicosatetraenoic acid (5-HETE). Various diaryl heptonoids, including curcumin, were found to be potent inhibitors of 5-HETE productions by intact human neutrophils with IC 50 values ranging from 4 to 8 μ M.^{6,7} Curcumin reduces the neutrophil infiltration in inflammatory conditions and inhibit platelet aggregation⁸.

It is also a potent inhibitor of pro-inflammatory cytokines (IL and TNF). The oxygen radical scavenging activity of curcumin has also been implicated in its antiinflammatory effects^{9,10}.

Curcumin achieves the therapeutic goals through:

1. Cytotoxicity and induction of apoptosis
2. Inhibition of carcinogenesis
3. Inhibition of cyclooxygenase transcription
4. Effects on phase I and II carcinogen metabolising enzymes
5. Antioxidant actions
6. Effects on angiogenesis and cell adhesion
- 7.

V. Therapeutic Applications Of Turmeric

1. Antioxidant
2. Anti-inflammatory
3. Hepatoprotective
4. Antiplatelet aggregation
5. Antimutagenic
6. Antimicrobial
7. CVS effects
8. Gastric effects

VI. Dental Applications Of Turmeric

1. Dental pain management: Reduces pain and swelling. Owing to the anti-inflammatory property of turmeric, it is widely used in combination with salt and mustard oil to get relief from dental pain as a very common home remedy. Turmeric is also used in roasted form as a local applicant for dental pain management.
2. Periodontal problems: Used as a topical agent or as a mouth wash owing to its antimicrobial property. Rinsing the mouth with turmeric water, applying it locally in combination with salt and mustard oil leads to reduction in signs and symptoms associated with periodontal problems which includes gingivitis and periodontitis.
3. As a subgingival irrigant: It has been observed that 1 percent curcumin used as subgingival irrigant resulted in reduced inflammation, reduced bleeding on probing. It is also used as a local drug delivery system in periodontal related problems.
4. In dental plaque detection systems: The yellow pigment in turmeric makes it an instrumental for plaque detection.
5. As a pit and fissure sealent.

VII. Why Turmeric?

Why not turmeric? It is non toxic, biocompatible, cheap and easily available resource with remarkable properties. Evidenced and referenced since the vedic period, actions of turmeric are continuing to be instrumental in treatment of various diseases.

VIII. Conclusion

Turmeric is an anti-inflammatory, analgesic, antimicrobial, antiseptic, analgesic and antioxidant agent that has a huge potential against various health related problems. Easily available, economical, easy to use turmeric has a high benefit to cost ratio.

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