Uses of turmeric in dentistry: An update

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Abstract

Turmeric has been used for thousands of years as a dye, a flavoring, and a medicinal herb. In India, it has been used traditionally as a remedy for stomach and liver ailments, as well as topically to heal sores. Ancient Indian medicine has touted turmeric as an herb with the ability to provide glow and luster to the skin as well as vigor and vitality to the entire body. Since turmeric has antimicrobial, antioxidant, astringent, and other useful properties, it is quite useful in Dentistry also. The objective of this article is to highlight various uses of turmeric in the dental field along with its use in medical problems.

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Herbal medicines are drugs of plant origin used to treat diseases and to attain or maintain a condition of improved health. Herbs with medicinal properties are a useful and effective source of treatment for various diseases. Many drugs used in Western medical science (called allopathic medicine) have their origin in medicinal plants.

Turmeric is a perennial plant with orange, oblong tubers 2 or 3 inches in length and one inch in diameter, pointed or tapering at one end. When dried, it is made into a yellow powder with a bitter, slightly acrid, yet sweet taste. It is similar to ginger.

India produces nearly the whole world's turmeric crop and consumes 80% of it. With its inherent qualities, Indian turmeric is considered to be the best in the world. The fresh spice is much preferred to the dried spice in South East Asia. The fresh rhizome is grated and added to curry dishes; it is also used as a yellow curry paste in Thailand. Due to Indian influence, turmeric has also made its way into Ethiopian cuisine. Besides flavoring food, the most common uses of turmeric are to purify the blood and remedy skin conditions. Many people are familiar with turmeric as a traditional Middle-Eastern spice, but few know of its medicinal virtues. Turmeric, otherwise known as Circum a longa, is a member of the ginger family, Zingiberaceae. The Latin name is derived from the Persian word, "kirkum," which means "saffron," in reference to the rhizome's vibrant yellow-orange color. It is indigenous to southeast Asia, but has long been used and cultivated throughout India. Turmeric is highly valuable for the influence it exerts on the digestive system and the liver. In both Ayurvedic and traditional Chinese medicine, it is considered to be a bitter digestive and a carminative. It is used by Unani practitioners to expel phlegm or kapha, opening out the blood vessels 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 chologogue, stimulating bile production in the liver and encouraging the excretion of bile via the gallbladder. This improves the body's ability to digest fats. Western cuisine does not use turmeric directly, but it forms part of several spice mixtures and sauces; it is also used to impart a bright yellow color to mustard paste.

**Therapeutic Actions of Turmeric**

The active constituent of turmeric is known as curcumin. It has been shown to have a wide range of therapeutic actions of curcumin.

It protects against free radical damage because it is a strong antioxidant. [1] It reduces inflammation by lowering histamine levels and possibly by increasing the production of natural cortisone by the adrenal glands. [2] It protects the liver from a number of toxic compounds. [3] It has been shown to prevent platelets from clumping together, which in turn improves circulation and may help protect against atherosclerosis. [4] Laboratory tests have found that turmeric is antimutagenic, as it potentially helps prevent new cancers that are caused by chemotherapy or radiation used to treat existing cancers. It effectively inhibits metastasis (uncontrolled spread) of melanoma (skin cancer) cells [5],[6] and may be especially useful in deactivating the carcinogens in cigarette smoke and chewing tobacco. Curcumin inhibits HIV in test tubes, though human trials are needed to determine if it has any usefulness for treating humans with this condition. [7],[8] Curcumin is also useful for reducing inflammation and symptoms such as pain and stiffness in the joints. Turmeric in the diet may prevent pain from arthritis, bursitis, and tendonitis. [9] A separate double-blind clinical trial found that curcumin was superior to placebo or phenylbutazone (a non steroidal anti-inflammatory drug [NSAID]) for alleviating...
post-surgical inflammation. [10] Turmeric in the diet increases the production of enzymes that digest fats and sugars and stop cholesterol from forming gallstones. Turmeric is helpful for people with indigestion. Results in people with stomach or intestinal ulcers have not shown it to be superior to a placebo and have demonstrated it to be less effective than antacids. [11],[12],[13] Preliminary research indicates a possible benefit of oral curcumin supplementation for chronic anterior uveitis (inflammation of the iris and middle coat of the eyeball). [14] Turmeric is exceedingly useful in the treatment of some urinary disorders such as diabetes mellitus. [15] Turmeric stimulates the secretion of bile, is anti-inflammatory, anti-bacterial, eases stomach pain, and is an antioxidant. Turmeric in the diet increases the production of enzymes that digest fats and sugars and stops cholesterol from forming gallstones. [16] When applied to the skin and exposed to sunlight, turmeric is strongly anti-bacterial. It can be used for parasitic infections. Fresh juice from the rhizome or a paste prepared from turmeric or decoction is often used as a local application as well as internally in the treatment of leprosy, snake bites, and vomiting associated with pregnancy. [17] In case of smallpox and chickenpox, turmeric is applied as a powder or as a paste to facilitate the process of scabbing. [18],[19] Turmeric powder with alum powders are mixed in a proportion of 1 to 20 and is blown into an ear that has chronic discharge or otorrhoea.

**Dental Application of Turmeric**

Dental problems

Turmeric can be used in following ways offer relief from dental problems: [20]

Rinsing the mouth with turmeric water (boil 5 g of turmeric powder, two cloves, and two dried leaves of guava in 200 g water) gives instant relief. Massaging the aching teeth with roasted, ground turmeric eliminates pain and swelling. Applying the powder of burnt turmeric pieces and bishop's weed seed on teeth and cleaning them makes the gums and teeth strong. Applying a paste made from 1 tsp of turmeric with ½ tsp of salt and ½ tsp of mustard oil provides relief from gingivitis and periodontitis. Rub the teeth and gums with this paste twice daily.

**Pit and fissure sealant**

It has been found that tinted pit and fissure sealant is useful for applying to tooth surfaces for the prevention or reduction of dental caries. This sealant can be produced from a composition comprising a polymerizable resin system containing acrylic monomer and at least one colorant selected from the group consisting of Annatto extract, turmeric extract, and β-Apo-8'-Carotenal.[21]

**Dental-plaque detection system**

Caries or periodontal diseases are thought to be infectious diseases caused by bacteria present in dental plaques and it is known that the removal of dental plaques is highly important for the health of oral cavities. However, dental plaques are not easy to identify by the naked eye and it is difficult to confirm their attachment site and extent precisely. Accordingly, dental plaques are generally stained with dental-plaque staining agents, which contain dyes, to reveal their locations in order to uncover the attached dental plaques.
The dental-plaque detection system includes a dental-plaque staining agent, which contains at least one selected from the yellow pigment of beni-koji, turmeric extracts, and curcumin; and a light-emitting apparatus, which outputs light having a wavelength within a range of 250 to 500 nm to an object in the oral cavity where the dental-plaque staining agent is attached. A yellow pigment of beni-koji and turmeric are known as staining agents also used for other purposes. [22]

Summary

The benefits of turmeric include: analgesic, antibacterial, anti-inflammatory, anti-tumor, anti-allergic, antioxidant, antiseptic, antispasmodic, appetizer, astringent, cardiovascular, carminative, cholagogue, digestive, and diuretic. There are many uses of turmeric in dentistry. The use of plants and herbs for dental care is a very common indigenous system of medicine and we must include it in our everyday life. Further research is needed for the proper use of turmeric in Dentistry.

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