

Effectiveness of Turmeric in Dentistry-A Review Article

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Abstract: *Turmeric has been used for thousands of years as a dye, a flavoring, and a medicinal herb. Since turmeric has antimicrobial, antioxidant, astringent, and other useful properties, it is quite useful in Dentistry. The objective of this article is to highlight various uses of turmeric in the dental field.*

Keywords: Dentistry, turmeric, dental caries, preventive dentistry uses

1. Introduction

Turmeric (haldi), a rhizome of *Curcuma longa*, is a flavourful yellow-orange spice. Its plant is 3 feet in height and has lance-shaped leaves and spikes of yellow flowers that grow in a fleshy rhizome or in underground stem. An orange pulp contained inside the rhizome constitutes the source of turmeric medicinal powder⁽¹⁾. Components of turmeric are named curcuminoids, which include mainly curcumin (diferuloyl methane), demethoxycurcumin, and bisdemethoxycurcumin. Curcumin (diferuloylmethane) is a polyphenol derived from *Curcuma longa* plant, commonly known as turmeric. The active constituents of turmeric are the flavonoid curcumin (diferuloylmethane) and various volatile oils including turmerone, atlantone, and zingiberone. Other constituents include sugars, proteins, and resins. The best-researched active constituent is curcumin, which comprises 0.3-5.4% of raw turmeric. Curcumin has been used extensively in ayurvedic medicine for centuries, as it is nontoxic and has a variety of therapeutic properties including antioxidant, analgesic, anti-inflammatory, antiseptic activity, and anticarcinogenic activity⁽²⁾. Active constituent of turmeric is known as curcumin, this acts as the key ingredient in turmeric that adds to its medicinal values

2. Uses of Turmeric in Dental Field

- 1) To relieve from aching dental pain
- 2) Treatment of periodontal problems
- 3) As a local drug delivery system
- 4) As a dental irrigant
- 5) Pit and fissure sealant
- 6) In treatment of precancerous lesions
- 7) Anticancer property

Turmeric Can Be used in following ways Offer Relief from Dental Problems

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⁽³⁾

As a Pit and Fissure Sealant in Preventive Dentistry

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 polymerisable resin system containing acrylic monomer and at least one colorant selected from the group consisting of Annatto extract, turmeric extract, and β -Apo-8'-Carotenol.⁽²⁾

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.⁽³⁾

In a recent study turmeric turmeric mouthwash (10 mg curcumin extract dissolved in 100 ml of water with a peppermint flavoring agent added was found to be as effective as a solution made from chlorhexidylgluconate (CHX), the gold standard compound for plaque buildup in dentistry.

Anticancer Property

Curcumin has been found to possess anticancer activities because of its effect on a variety of biological pathways involved in mutagenesis, oncogene expression, cell cycle regulation, apoptosis, tumorigenesis, and metastasis. It

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potentiates the effect of chemotherapy and acts as an enhancer of radiotherapy. Also, it is found to arrest carcinomatous cells in the G2/M phase of cell cycle, in which cells are more susceptible to cytotoxic effects of radiotherapy.⁽⁴⁾

The anticancer property of turmeric is of great importance as malignancy has shown a great increase in the past 2 decades and it is important to do further research on this topic to obtain all possible cure for the same. Since turmeric is locally available it is of great use to make maximum use of the plant taking turmeric on a daily basis has also shown to have a great improvement in overall increase in the immune system

3. Conclusion

The efficiency of turmeric is often underestimated. It is an amazing herb providing various health benefits when taken both orally and when applied topically. The anticancer property of curcumin is of great importance and it is important to conduct further research on this herb to get a better understanding of its medicinally properties and its use in the treatment and prevention of malignancy.

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