Awareness Of Medicinal Effects of Tamarindus Indica Among Dental Students

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Abstract

Introduction: Tamarindus indica L also recognized as Tamarind is a common plant species in the Indian subcontinent. Tamarind derivatives are widely used in Asia, african and south american nations as medical treatments. In ancient indian medicine and african traditional medicine, tamarind ingredients, seeds, fruits, and leaves have been commonly used.

Aim: The study aimed to assess knowledge amongst dental students of the medicinal effects of Tamarindus indica.

Materials and method: A cross-sectional analysis with a self-administered questionnaire was performed, with Ten questions distributed among 100 dental students. In medical applications, the questionnaire measured understanding of Tamarindus indica treatment, its anti-inflammatory properties, anti-lipedemic properties, anti-pyretic activity, and its phytocompound action mechanism. We reported and evaluated the responses.

Results: 21% of the respondents were aware of the medicinal applications of Tamarindus indica therapy. 15% were aware of the anti-inflammatory of Tamarindus indica therapy. 13% were aware of the anti-lipedemic activity of Tamarindus indica therapy. 10% were aware of the anti-pyretic activity of Tamarindus indica therapy. 8% were aware of the mechanism of action of phytocompounds of Tamarindus indica therapy.

Conclusion: There is limited awareness amongst dental students about the use of Tamarindus indica therapy in medicinal applications. Increased awareness campaigns and dental education initiatives coupled with increased value for curriculum changes will further improve knowledge and understanding of Tamarindus indica therapy.

Keywords: Awareness, Tamarindus indica, students, medicinal

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INTRODUCTION

Tamarindus indicica L also recognized as Tamarind is among the Indian subcontinent's most widespread plants. This is a tree with an incredibly gorgeous expanding crown, and is grown all over India(1). Tamarind is polyvalent plant. The fruit pulp has often used as spice in the Asian cuisine, particularly in the southern part of India. Nearly all parts of plants are used in the nutrition, chemical, pharmaceutical and textile industries, or even as forages, wood and fuel (2-4) The Tamarindus genus is a monotypical genus usually contains the sole T species belonging to Sub - family Caesalpinioideae and corresponds to the class Fabaceae

Tamarind fruit is mostly composed of the pulp and seeds. The fruit, either ripe and dried, mainly contains tartaric acid which reduces pectin, sugar, tannin, fibre and cellulose. All seeds do contain protein, fat, carbohydrates and sugars. Both pulp and seed are strong potassium, calcium and phosphate sources and contains other minerals such as sodium, iron and zinc (5,6).

Tamarind products are widely used in Asia, america and africa as health remedies. Tamarind derivatives, seeds, leaves, fruits were commonly used in the Indian ayurvedic system of medicine and indigenous african medicine (6,7). Ancient Sanskrit literature discusses the therapeutic benefits of tamarind. Tamarind fruits, imported by Arab merchants from India, were best-known in Europe for their medicative properties. The ethnopharmacology of Tamarind has been extensively reviewed by Havinga et al. (8). In the African sense, indica and implied variations in the ways tamarind has been used in traditional medicines in various parts of Africa. The study aimed to assess knowledge amongst dental students of the medicinal effects of Tamarindus
indica.

**Materials and method**

A cross-sectional analysis with a self-administered questionnaire was performed, with Ten questions distributed among 100 dental students. In medical applications, the questionnaire measured understanding of Tamarindus indica treatment, its anti-inflammatory properties, anti-lipedemic properties, anti-pyretic activity, and its phytocompound action mechanism. We reported and evaluated the responses.

**Results**

21% of the respondents were aware of the medicinal applications of Tamarindus indica therapy (Fig 1). 15% were aware of the anti-inflammatory activity of Tamarindus indica therapy (Fig 2). 13% were aware of the anti-lipatedemic activity of Tamarindus indica therapy (Fig 3). 10% were aware of the anti-pyretic activity of Tamarindus indica therapy (Fig 4). 8% were aware of the mechanism of action of phytocompounds of Tamarindus indica therapy (Fig 5).

![Fig 1: Awareness about the medicinal applications of Tamarindus indica therapy](chart1)

![Fig 2: Awareness about the anti-inflammatory activity of Tamarindus indica therapy](chart2)
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Fig 3: Awareness about the anti-lipidemic activity of Tamarindus indica therapy

Fig 4: Awareness about the anti-pyretic activity of Tamarindus indica therapy

Fig 5: Awareness about the mechanism of action of phytocompounds of Tamarindus indica therapy
Discussion

Tamarind’s therapeutic uses that include its use as an anthelmintic, antimicrobial, antiseptic, antiviral, sunscreen and astringent and encourage wound healing under the following conditions: asthma, bacterial skin infections, burns, chest pain, cholesterol metabolism disorders, colds, colic, conjunctivitis, constipation, diarrhea, diarrhoea, dry eyes, dysentery, eyesight disorders. (9) Sadik (2010) indicated that the intake of appropriate amounts of ‘poha beer,’ a common Northern Ghana tamarind fruit drink in Africa, may aid reduce the occurrence of iron deficiency anaemia. These were related to the quality of vitamin C there which improves the pharmacokinetics of non-haem iron. (10)

This is used as a mouthwash for sore throat, wound dressing (11) and is known to help restore sensation in paralysis situations. Tamarind is also reported to help cure malaria fever (12). The pulp is used in Southeast Asia to combat the ill effects of chaulmoogra, a leprosy drug, and the pulp is used as a rheumatic linier in Mauritius. In Cambodia and India, tamarind seeds were used in the powdered form to manage boils and dysentery. Steamed, crushed seeds are documented to reduce ulcers, inflammation, and bladder stones and to manage diabetes, powdered form of seed husks were used (13).

Takahashi et al. (14) significantly enhanced bioavailability of anti-influenza ammatory drugs that use tamarind xyloglucan. It has been shown that fruit extracts also improve the bioavailability of ibuprofen in humans (15). Tamarind xyloglucan has also been demonstrated to display a significant antidiabetic activity in rats (16). The use of tamarind purified xyloglucan in eye surgical operation for conjunctival cell attachment, corneal healing process as well is of current medical concern. The polysaccharide tamarind seed represents a promising choice as a tool for the topical treatment of infectious keratitis, a severe ocular disease (17). Many medical trials have also shown tamarind consumption postponed fluorosis progression by the fluoride excretion (18).

Many studies of antioxidant capacity in tamarind suggest that fruit contains mineral nutrients of biological significance and has high antioxidant potential correlated with high phenolic content which can be positively associated to human health (19). Tsuda et al. (20) confirmed that the seed coat of tamarind includes phenolic antioxidants such as methyl3,4-dihydroxybenzoate, 2-hydroxy-30, 3,4-dihydroxyphenyl acetate, 40-dihydroxyacetophenone, and epicatechin. Tamarind seed investigations demonstrated that perhaps the seed coat has antioxidant activity as evaluated using the thiocyanate and the thiobarbituric (TBA) method (21).

Extracts of ethyl acetate produced from coat seed have had potent antioxidant activity. Martinello et al. (22) noted the extract of fruit pulp from T. Indica, when administered to hypercholesterolaemic at a concentration of 5 percent, hamsters contributed to a reduction in total cholesterol levels and an rise in HDL, suggesting its ability to lower the incidence of human atherosclerosis. Siddaraju (23) reported radical scavenging behavior towards linoleic acid emulsion systems, and strong antioxidant activity of the tamarind seed cover extracts.

It is stated that the tamarind fruits have antibacterial and antifungal properties (24). It is very active against the Cultures of Aspergillus niger and Candida albicans indicating powerful fungicidal activity. Daniyan and Muhammad investigations (25) revealed antibacterial activities of tamarind against Klebsiella pneumoniae, Escherichia coli, Salmonella paratyphi, Pseudomonas aeruginosa, and Staphylococcus aureus, that are causative agents for urinary infections, injuries, pneumonia, and also paratyphoid fever. The use such materials with Antimicrobial properties could help reduction of oral microflora (26).

Conclusion

There is limited awareness amongst the dental students about the use of Tamarindus indica therapy in medicinal applications. Increased awareness campaigns and dental education initiatives coupled with increased value for curriculum changes will further improve knowledge and understanding of Tamarindus indica therapy.

REFERENCES