International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2015): 78.96 | Impact Factor (2015): 6.391

Uses of Neem in Treatment of Dental Caries

Dr. Harshini A. K.

Saveetha Dental College

Abstract: ***From time immemorial , dental caries has and continues to be the most prevalent disease in humans , second to common cold. It causes irreversible damage to the grinding machinery involved in the intake of food and hence causes great distress. The following is an article on how neem extract is useful as a remedy against dental caries.***

Keywords: Neem, Dentistry, Treatment, Dental Caries, Preventive Dentistry

1. Introduction

Based on changes in the dietary habits , socio economic status and lack of proper education , the incidence of dental caries is rapidly increasing in rural and semi urban areas. Due to the lack of dental clinics in rural areas , the option of treatment measure is expensive and hence not cost effective in most of the rural population . Hence easily acquirable and cost effective treatment measures are required for both prevention and cure.

The changes in the homeostasis of the oral cavity with an overgrowth of Streptococcus mutans is recognized as the primary cause of dental caries. Most treatments today are aimed at either elimination of these bacteria or at suppressing its virulence. S. mutans strongly adheres to the teeth and causes release of acids by fermentation of carbohydrates , leading to the demineralization of the teeth . Ambiguities in the basic treatment of dental caries, such as the use of fluoride and antibiotics, vitalize the deployment of probiotic therapies for its cure. The growing research has led to the development of phytochemicals to limit the virulence of S. mutans, and neem extract is one such (1,2).

2. Discussion

The evergreen tree NEEM, has been used as a traditional medicine for centuries in India . Earlier studies showed that extracts obtained from the bark of neem tree contains substances with anti inflammatory action. Various preparations from different parts of neem have shown to have anti bacterial ,anti ulcer and contraceptive action . Recently Wolinsky et al. have reported that active components from a bark containing neem stick have appeared to inhibit the virulent activities of oral streptococci in the oral cavity.

The focus on neem is because of its easily availability in India, especially south india and it's bark is easy to peel from the stem of the tree. It has also been reported to have anti plaque and many other pharmacological properties.

According to a recent study done, 5% w/v neem bark extract showed appreciable inhibitory effects as compared to 0.2% chlorhexidine. It has also been proven that more than the aqueous extract, the extract obtained from the bark of neem using organic solvents such as acetone , inhibit the growth of S.mutans and S. sobrinus . Fibrous nature of neem sticks may act as anti plaqueagents. This may cause mechanical removal of plaque and also contains chemotherapeutic agents which aid in plaque removal. Neem is rich in astringents, calcium, fluoride, chloride and sulphur. The maximal inhibition effects against S.mutans are due to the presence of salts like calcium and fluoride .Generally, fluoride has anticariogenic property due to its affinity towards hydroxy apatite crystals. Sulphur and saponins have anti septic and carminative properties which inhibit microbial growth. A study conducted by Khalid in 1999 at Saudi Arabia, reported the efficacy of neem extracts have maximal anti microbial activity at different concentrations. At 50% concentration, maximum inhibition occurs against S. mutans. The bactericidal activity of neem is mainly because of the inhibition of cell membrane synthesis in bacteria. Chloroform extract of neem showed strong inhibitory effects against Streptococcus salivarius. (3, 4, 5)

3. Conclusion

As the oral cavity is the mirror of the whole body , oral hygiene plays a vital role in general health. The use of neem stick as a tooth brush in many parts of india is known . From various studies it has been proven that chewing of neem sticks by itself shows greater anti microbial property. The only disadvantage is that at times it can cause gum injury . Not just as tooth brush , neem extracts can hence be used as a remedy for dental caries as it not just has anti bactericidal properties but also anti-fungal, anti viral and anti plaqueactivities . Hence more research must be done to explore all possible ways of utilisingneem in various diseases involving the oral cavity .

References

[1] Antibacterial effects of the crude Azadirachtaindicaneem bark extract on Streptococcus mutans .Pediatric dental journal 7(1):61-64, 1997.
[2] The efficacy of neem extract on four microorganisms responsible for causing dental caries viz. Streptococcus mutans , Streptococcus salivarius , Streptocoocusmitis and Streptococcus sanguis : an in vitro study. The journal of contemporary dental practice , November-december 2012;13(6):769-772.
[3] Cytotoxic evaluation of Meliaazedarach and in comparison with ,Azadirachtaindica and its phytochemical investigation .Jafari et al . DARU journal of pharmaceutical sciences 2013 , 21:37.
[4] Clarke jk : ON THE BACTERIAL factor in the etiology of dental caries. Br J ExpPathol , 1924;5:141-47.

Licensed Under Creative Commons Attribution CC BY

[5] Fitzgerald RJ ,Keyes PH : Demonstration of the etiologic role of streptococci in experimental caries in the hamster .J. Am Dent Assoc, 1960 ;61:9-18.
[6] Naturally Occurring Molecules as Alternative Therapeutic Agents against Cariogenic Biofilms . ADV. DENT RES 21:63-68 , AUGUST 2009

Licensed Under Creative Commons Attribution CC BY