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PREVENTION OF DENTAL CARIES BY HERBAL EXTRACTS

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Abstract:

The aim was to evaluate the prevention of dental caries by herbal extracts. Antibiotic therapy has reached its limit with regard to antimicrobial resistance in recent years. Hence, in this review, plant extracts that causes inhibition of development of dental caries. Herbal extracts are significant because of being non chemical and non-synthetic.

Introduction:

Oral health influence the quality of life and poor oral health is associated with systemic disease and poor health .the development of dental caries involves mostly gram positive bacteria such as mutans streptococci, actinomycetes and lactobacilli.

Dental decay is caused by bacteria fermenting foods, producing acids and dissolving tooth mineral. In recent decades the process has been much better defined from several aspects including microbiology, saliva, tooth mineral composition, tooth ultrastructure, diffusion processes, kinetics of demineralization, the reversal of demineralization that is known as remineralization, and factors that contribute to the reversal of the process.(1–3)the earliest clinical sign that dental caries is in progress in the mouth is the so-called “white spot lesion.

Demineralization begins at the atomic level at the crystal surface inside the enamel or dentine and can continue unless halted with the end-point being cavitation. There are many possibilities to intervene in this continuing process to arrest or reverse the progress of the lesion.

Remineralization is the natural repair process for non-cavitated lesions, and relies on calcium and phosphate ions assisted by fluoride to rebuild a new surface on existing crystal remnants in subsurface lesions remaining after demineralization. These remineralized crystals are acid resistant, being much less soluble than the original mineral.(4,5)

Discussion

USE OF GALLA CHINESIS IN INHIBITION OF CARIOGENICITY

Galla chinesis is a traditional Chinese plant that is mainly used for herbal remedies . Galla chinensis can be classified into 2 types – Du-ensiform gall and horned gall. Du-ensiform gall is long, rounded or fusiform sac, which is 2.5 to 9cm long and 1.5 to 4cm in diameter based on size(6). in the year 2008 , research was carried out to check for anticariogenicity property of galla chinesis by growing four-organism bacterial consortium (Streptococcus sanguis, Streptococcus mutans, Actinomyces naeslundii, Lactobacillus rhamnosus) on hydroxyapatite (HA) discs, bovine enamel blocks, and glass surfaces in a continuous culture system and exposed to repeated solution pulses. Galla Chinensis extracts, sucrose solutions, and sodium fluoride solutions were used into different flow cells.The pH value was recorded and the bacteria colonizing the biofilm on the HA discs were counted following which the lesion depth was evaluated. The results showed that Galla Chinensis may inhibit the cariogenicity of the oral biofilm.(7)it is also found that remineralisation of enamel lesion by galla chinesis is different from fluoride.(8)

USE OF CURCUMA LONGA TO INHIBIT CARIOGENECITY

Curcuma longa is a rhizomatous herbaceous perennial plant of the ginger family, Zingiberaceae.(9) It is native to southwest Indian the year 2011,curcuma longa was used to check for prevention of dental caries the growth and acid production of S. mutans were tested. Following which the effect of C. longa essential oil on adhesion to saliva-coated hydroxyapatite beads (S-HAs) was investigated. The results shows that curcuma longa may inhibit the cariogenicity (10)

EFFECT OF ASHWAGADHA TO RESTRAIN VIRULENCE OF S.MUTANS

Ashwagandha (Withaniasomnifera) is an important ancient plant, the roots of which have been employed in Indian traditional systems of medicine(11) In the year 2015,The anti-acidogenic activity of fractions separated from W. somnifera was compared, and then the most active anti-acidogenic fraction was chemically characterized using gas chromatography-mass spectroscopy,hence The results suggest that linoleic and oleic acids may be effective agents for restraining virulence of S. mutans biofilms(12)

EFFECT OF MAGNOLOL AGAINST S.MUTANS

The extracts of mangolia have been used in traditional Chinese and Japanese medicine.in this year 2016, the antibacterial activities of magnolol and honokiol, the main constituents of the bark of magnolia plants, toward planktonic cell and

biofilm of *S. mutans* were examined and compared with those of chlorhexidine Magnolol (50 µg/mL) had greater bactericidal activity it was found that magnolol has antimicrobial activities against planktonic and biofilm cells of *S. mutans*. (13)

Conclusion

Herbal extracts are used for various home remedies and in prevention of dental caries various herbals are used and these have gained interest among many due to absence of side effects ,and not being synthetic

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