

Antimicrobial effect of methanol extract of nutmeg on clinical strains of streptococcus mutants isolated from patients with dental caries.

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ABSTRACT

Dental caries or tooth decay is one of the most common chronic diseases in the world. Streptococcus mutants are the major etiological agent of caries. At present, antibiotics like penicillin, vancomycin is administered to treat caries. Fluoride and chlorhexidine in various preparations is also the mainstay for caries management. Fluorine possesses high levels of toxicity. Fluoride and chlorhexidine are not recommended for children below 6 years. The prevalence of dental caries is very high in children below 6 years. As such there is no complete treatment available for caries especially to children. Natural antibiotics are products obtained from plants which have been used in folk medicines for the treatment of various ailments. Nutmeg is a spice from the tree Myristica Fragrans that has long been prized for its medicinal properties. Nutmeg is known for its antimicrobial properties against several pathogenic bacteria. In our study we obtained a methanol extract of nutmeg, performed phytochemical studies on the extract, purified the extract by silica gel column chromatography, and identified the active ingredient as macelignan by NMR. We isolated 250 strains of Streptococcus mutants from patients suffering from caries who attended the outpatient clinic of our hospital. Mitis salivarius bacitracin agar was used for the primary isolation. We tested the antimicrobial effect of methanol extract of nutmeg, on the clinical strains of strep-mutants by disc method. We determined the minimum inhibitory concentration of the natural antibiotic by broth dilution method. We have observed that all the 250 strains of Streptococcus mutants isolated from patients with dental caries were inhibited by methanol extract of nutmeg. Bacterial strains from 64.8 % of the patients were inhibited at concentration of 31.25 µg / ml of nutmeg. We hereby report that methanol extract of nutmeg has high inhibitory activity against the clinical strains of Streptococcus mutants.