

Other Formats: [MEDLINE](#)Links: [Related Articles](#)*J Clin Periodontol* 1991 Feb;18(2):97-100

Short-term bactericidal activity of chlorhexidine gel, stannous fluoride gel and amine fluoride gel tested in periodontal pockets.

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The short-term bactericidal effect of 2% chlorhexidine gel, 4% stannous fluoride gel or amine fluoride gel containing 1.25% fluoride on the subgingival microflora was determined in 40 periodontal pockets of 10 patients. The antimicrobial gels or placebo gel were applied in 5-9 mm deep periodontal pockets 3 times within 10 min. Before and 30 min after the applications, samples were taken of the subgingival microflora for determination of the total number of bacteria as well as the number of black pigmented *Bacteroides*. Reductions of the total number of bacteria were found in all test groups. The reductions found in the pockets treated with chlorhexidine gel or stannous fluoride gel were significantly greater than the reduction found in the pockets treated with a placebo gel. A significant reduction of black-pigmented *Bacteroides* was found after treatment with chlorhexidine gel or amine fluoride gel. It is concluded that 2% chlorhexidine gel or 4% stannous fluoride gel has a more than 99% reduction effect on the microflora of periodontal pockets within 30 min after application.

MeSH Terms:

- Adult
- Amines/therapeutic use*
- Amines/administration & dosage
- Bacteria/isolation & purification
- Bacteria/drug effects*
- Chlorhexidine/therapeutic use*
- Chlorhexidine/administration & dosage
- Colony Count, Microbial
- Dental Plaque/microbiology
- Double-Blind Method
- Female
- Fluorides/therapeutic use*
- Fluorides/administration & dosage
- Gels
- Human
- Male
- Methylcellulose

Other Formats: Links: *J Formos Med Assoc* 1991 Jun;90(6):565-571

Inhibitory effect of stannous fluoride and other commonly used antimicrobial agents on oral bacteria.

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The purposes of this investigation were to evaluate and compare the antimicrobial effect of stannous fluoride (SnF₂) gel and other commonly used oral antimicrobial agents/products. The antibacterial inhibitory effect of the various agents was evaluated by their effect against oral plaque bacteria including strains of *Streptococcus sanguis*, *Streptococcus sobrinus*, *Actinomyces viscosus*, *Actinobacillus actinomycetemcomitans*, *Bacteroides gingivalis* and *Bacteroides intermedius*. A lawn of the specific bacteria to be tested was placed onto blood agar plates. Wells were then punched into the agar and each well was filled with 75 microliters of one of the antimicrobial products or control solutions. A positive control was a 0.12% chlorhexidine solution and a negative control was physiological saline. Agar plates were incubated in an anaerobic chamber at 37 degrees C for 5-7 days. Zones of inhibition in the lawn of bacteria were measured by a boley gauge. Each experiment was performed in duplicate and mean zones of bacterial inhibition were determined. Only 0.4% SnF₂ and 0.12% chlorhexidine were consistently more effective in inhibiting oral bacteria when compared with other commercial mouth rinses/agents which had any one of a variety of antimicrobial agents as ingredients ($\alpha = 0.05$). This *in vitro* study demonstrates that stannous fluoride gel is as effective as chlorhexidine in inhibiting the growth of bacteria often found in dental plaque.

MeSH Terms:

- Anti-Infective Agents/pharmacology*
- Bacteria/drug effects*
- Human
- Microbial Sensitivity Tests
- Mouth/microbiology*
- Support, Non-U.S. Gov't
- Tin Fluorides/pharmacology*

Substances:

- Tin Fluorides
- Anti-Infective Agents

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 the above report in format.

Other Formats: [MEDLINE](#)Links: [Related Articles](#)*Am J Orthod Dentofacial Orthop* 1994 Jan;105(1):35-41

Eighteen-month evaluation of the effects of a 0.4% stannous fluoride gel on gingivitis in orthodontic patients.

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The purpose of this study was to determine whether conventional toothbrushing and twice daily use of a brush-on 0.4% stannous fluoride (SnF₂) gel containing more than 90% available Sn²⁺ would be more effective for controlling plaque accumulation and gingivitis in the presence of orthodontic appliances than conventional toothbrushing alone. Consecutively treated adolescents who were to receive full-mouth fixed orthodontic appliances were assigned to one of two groups according to age and sex criteria. The first group (control, n = 35) used toothbrushing with a standard fluoride toothpaste, whereas the second group (treatment, n = 30) used toothbrushing supplemented with a 0.4% SnF₂ gel used twice daily for the entire 18-month study period. Clinical assessments (Plaque Index, Gingival Index, bleeding tendency, and coronal staining) were made single blind before appliances were placed and 1, 3, 6, 9, 12, and 18 months after appliances were placed. Complete data were obtained for 32 control and 23 SnF₂ gel subjects. The results indicated that the SnF₂ gel group had significantly lower scores for plaque index (p < 0.01), gingival index (p < 0.001), and bleeding tendency (p < 0.001) at all examinations than did the control group. In the SnF₂ group, one subject developed mild coronal staining, and two subjects developed moderate staining. We conclude that the use of a 0.4% SnF₂ gel containing more than 90% available Sn²⁺ is an effective adjunct to mechanical tooth cleaning in preventing gingivitis in adolescents undergoing orthodontic treatment with fixed appliances.

MeSH Terms:

- Adolescence
- Analysis of Variance
- Child
- Comparative Study
- Dental Plaque/prevention & control
- Dental Plaque/etiology
- Dental Plaque Index
- Gels
- Gingivitis/prevention & control*
- Human
- Longitudinal Studies
- Male
- Observer Variation

Other Formats: Links: *Int Dent J* 1994 Feb;44(1 Suppl 1):83-98

Recent advances in stannous fluoride technology: antibacterial efficacy and mechanism of action towards hypersensitivity.

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Stannous fluoride (SnF₂) is highly susceptible to oxidation and hydrolysis but both anhydrous and aqueous preparations can be well established by proper formulation. When stability in aqueous preparations is achieved by the use of certain strong complexing agents, reduced antibacterial activity is observed which may be attributed to reduced bioavailability of the stannous ion. In contrast, an anhydrous SnF₂ preparation maintains stannous ion in a stable but, uncomplexed form. This preparation displays antibacterial activity in saliva and delivers stannous ion which is absorbed onto surfaces making them less susceptible to plaque formation for an extended period of time (hours). When this anhydrous preparation is brushed onto dentine in vitro or in situ, one observes a nearly complete coverage of the dentine surface and occlusion of tubules by a tin-rich surface deposit. This finding indicates that the observed clinical efficacy of this preparation at relieving hypersensitivity is due to occlusion of tubules by a mixture of low solubility complexes of tin. A water-based SnF₂ preparation containing strongly complexed stannous ions does not form a surface coating on dentine in vitro suggesting that this preparation may not be optimal for treating hypersensitivity. Overall, the findings indicate that the stannous ions in a SnF₂ preparation must be maintained in a stable, bioavailable form for optimal efficacy against plaque and hypersensitivity to be obtained. The results suggest that these properties are provided by stable anhydrous preparations but are difficult to achieve simultaneously in aqueous preparations. When properly formulated, stannous fluoride preparations can provide multiple oral therapeutic benefits.

MeSH Terms:

- Bacteria/drug effects*
- Dental Plaque/prevention & control
- Dental Plaque/microbiology*
- Dentin/metabolism
- Dentin/drug effects
- Dentin Sensitivity/prevention & control*
- Human
- Tin Fluorides/therapeutic use*
- Tin Fluorides/pharmacokinetics
- Tin Fluorides/chemistry

Substances:

Other Formats: [MEDLINE](#)Links: [Related Articles](#)*Oral Surg Oral Med Oral Pathol* 1994 Nov;78(5):577-582

Cariogenic microflora in patients with Hodgkin's disease before and after mantle field radiotherapy.

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Because mantle field radiotherapy is associated with partial xerostomia in patients with Hodgkin's disease, the purpose of this study was to evaluate their cariogenic microflora before and after completion of radiotherapy. We obtained samples of oral saline solution rinse from 40 patients with Hodgkin's disease before radiotherapy and from 31 patients with Hodgkin's disease who had survived 1 to 24 years after radiotherapy. We also evaluated caries experience and history of fluoride gel use for caries prevention in these patients. Mutans streptococci and lactobacilli levels were significantly higher in the postradiotherapy patients with carious teeth, particularly in those with limited home use of fluoride gels. In the postradiotherapy group, caries parameters were significantly higher ($p < 0.05$) than in the preradiotherapy group. Within the postradiotherapy group, both caries and microbial parameters tended to be higher in patients who were less compliant about using the recommended 0.4% stannous fluoride "brush-in" technique than in those who used the gel regularly at home. This study indicates that for patients with Hodgkin's disease who receive mantle field irradiation during the management of their disease, a sustained brush-in program with stannous fluoride gel can be of benefit for caries prevention and for limitation of oral levels of cariogenic mutans streptococci.

MeSH Terms:

- Adolescence
- Adult
- Aged
- Cross-Sectional Studies
- Dental Caries/prevention & control*
- Dental Caries/microbiology
- Dental Caries/etiology
- DMF Index
- Female
- Gels
- Hodgkin's Disease/radiotherapy
- Hodgkin's Disease/microbiology*
- Human
- Lactobacillus/isolation & purification
- Lymph Nodes
- Male
- Middle Age