A satisfying rinse?

Deborah Lyle discusses the benefits and limitations of mouth rinses as an adjunctive treatment to conventional home-based cleaning, and whether using a water jet is a better option.

When it comes to preventive oral health-care, or tackling periodontal disease, dental professionals are in some ways restricted by what can be achieved in the appointments they have with the patient. Educating patients on efficient strategies for removing the alcohol content has an adverse effect on inhibiting plaque regrowth and gingivitis.

One long-term study sought to examine the antibacterial capacity and side effects of an alcohol-free lower concentration of CHX (0.05 per cent), combined with 0.05 per cent CPC, and found it had an anti-plaque effect comparable with that of a 0.2 per cent CHX + alcohol solution, but with reduced subjective side effects: slightly less staining and better taste.

Alcohol presence

The presence of alcohol in mouth rinses has become somewhat of a contentious issue. Besides known side effects, such as burning sensation and irritation of soft tissue (unpleasant especially for patients with mucositis or recurrent oral ulcerations), there has been debate about wider health and social concerns. Some of the ‘cosmetic’ over-the-counter brands can contain anywhere between 18 per cent and 26 per cent alcohol.

Water/wine have been suggested as a link between the alcohol content and oral cancer, a critical analysis of literature concluded that establishing a direct causal link is problematic and so far unsubstantiated. Interestingly, the same study also concluded that there is no evidence that alcohol increases the effects of the anti-plaque agents. The demand for non-alcoholic mouthrashes has increased and products containing different active ingredients, such as CPC, need to be studied further for efficacy.

Another chemical plaque-control agent is essential oils. In a six-month randomised controlled trial,38 a commercially available mouth rinse containing essential oils (Listerine), was compared with an experimental mouth rinse containing 0.07 per cent CPC (Crest Pro-Health) and found that both were effective in reducing gingivitis and the proportions of periodontal pathogens. Furthermore, a meta-analysis of six-month studies found six studies that showed essential oils to be effective as both an anti-plaque and anti-gingivitis agent, comparable with the results achieved by 0.12 per cent CHX. Essential oils have the disadvantage of low substantivity and, in some cases, an unpleasant bitter taste and burning sensation.

Main drawbacks

Regardless of the active ingredients of the mouth rinses, there are always two fundamental drawbacks to the efficacy of its delivery interdentially and to the sub-gingival areas. One way in which delivery can be improved is through using a dental water jet and several studies have examined the efficacy.

For instance, one study concluded that using a subgingival irrigation tip (Pik Pocket Tip) was effective in delivering a solution to 90 per cent of a six mm pocket, whilst rinsing only achieved 21 per cent. This is supported by an earlier study that penetration of periodontal pocket by supragingival irrigation tip with a powered device ranged from 44 per cent to 71 per cent.

Having the ability to penetrate subgingivally helps to reduce plaque biofilm and the pathogens that can cause gingivitis, calculus and bleeding. Using mouth rinses in conjunction with a dental water jet has been shown to be more effective than rinsing alone, as the irrigation device provides better interdental and subgingival penetration.

A six-month clinical observation of 222 patients sought to assess the efficacy of supragingival irrigation with 0.06 per cent CHX when compared against water irrigation and CHX rinsing. After six months, researchers found that all treatment groups:

• Had a significant reduction in the Gingival Index and the greatest reduction (42.5 per cent) occurred in the CHX irrigation group
• Demonstrated significant reductions in the per cent of marginal gingival bleeding sites, with the greatest reduction in the CHX irrigation group (46.5 per cent)

The study concludes that a low concentration of CHX irrigation with the a dental water jet was the most effective regimen for reducing the Plaque Index, Gingival Index, BOP, and marginal gingival bleeding. Significantly, the report also noted that water irrigation was equally effective as CHX rinsing in reducing gingivitis and was 37.5 per cent better in reducing gingival bleeding.

The best option?

While it is clear that mouth rinses provide an effective adjunct to mechanical cleaning, there are significant disadvantages with the chemical agents being used. Although CHX is the “gold standard” in antimicrobial rinses, it isn’t considered appropriate for long-term use and the documented side effects, such as staining and altered taste sensations, are likely to make patient compliance problematic.

Alternatives such as essential oils and CPC also have their drawbacks in terms of efficacy and all mouth rinses suffer the drawback of not being able to reach subgingival and interdental areas. It is also worth considering the long-term cost implication of having to use mouth rinses as a daily adjunct to mechanical cleaning.

Although it has been shown that irrigation with a CHX solution of a lower dosage can still have a significant impact on plaque and gingivitis, it has been demonstrated that irrigation with water alone is highly effective in removing plaque biofilm and reducing gingival inflammation.12-13.

References

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About the author

Deborah M Lyle received her BS in Dental Hygiene and Psychol- ogy from the University of Bridgeport and her DMD degree from the University of Missouri – Kansas City School of Dental Medicine. With over 16 year’s clinical experience in dental hygiene, her clinical interests include periodontal surgery, periodontal implants, periodontal medicine, periodontal risk factors, diabetes, systemic disease and therapeutic devices. Deborah is an editorial board member for the Journal of Dental Hygiene, Modern Hygiene, RDH, and Journal of Practical Hygiene. Currently, Deborah is the director of Professional and Clinical Affairs for Water Pik, Inc.

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