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BE ASSURED, THESE ARE EXACTLY THE SAME HIGHLY EFFECTIVE PRODUCTS. DHCo will continue to always provide you and your patients with the most effective highest quality, Truly Natural® oral hygiene products available anywhere in the world. Yours in Good Dental Health, Dental Herb Company®

PERIODONTICS

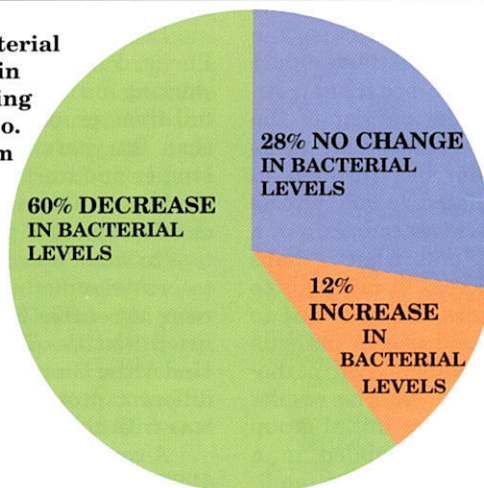
Microbiologically Monitored Periodontal Therapy Using an Herbal and Essential Oil Irrigant

By Steven M. Parrett, DDS

With recent reports linking oral bacteria to various systemic diseases and the specific plaque hypotheses for caries and periodontal diseases now widely accepted, general dentists are faced with a dilemma. Because dentists know that specific bacteria, such as the gram-positive streptococci that cause caries and the gram-negative porphyromonads, actinobacillus, and treponemes associated with periodontal disease, are oral bacteria that can contribute to developing systemic problems, they must begin to take responsibility for more than just filling teeth and cutting gums.¹ How can dentists more precisely diagnose chronic disease conditions? Can they provide treatments and home regimens for their patients that will result in less destruction to tissues, improved oral and general health maintenance, and control of the offending bacteria?

The following retrospective study describes the results achieved in a private practice setting using a recently introduced herbal and essential oil-based antiseptic. It was prescribed for use in an at-home program combined with in-office scaling and root planing to control bacteria associated with causing periodontal disease. Phase-contrast microscopy was used to monitor results by evaluating plaque samples from the gingival sulcus with quantification of the bacteria associated with periodontal disease. This method of classifying bacteria by morphology and motility as indicators of disease or states of health is well documented.²⁻⁴

Results of bacterial level changes in 50 patients using Dental Herb Co. Under the Gum Irrigant at home.



Upon observing significant improvement of the various periodontal parameters we monitor for our patients and being aware that many had been using Under the Gum Irrigant (Dental Herb Co), my curiosity was aroused. I stress that this is not a double-blind, scientifically controlled study, but a retrospective look at a series of cases that appeared to have a common thread that lead to a common successful result. This is a situation where many in general practice may find themselves. You have instructed patients in a home care regimen but truly do not have control over which irrigation device they use, how often they use it, which toothpaste or toothbrush they use or how often, and generally have little control over the many variables that exist. In these cases, the only thing I know for sure is

that all patients were given a specific irrigant when they left the office, and they all reported using it on a regular basis. That is the best control you will find in a general dental practice and the findings are honestly based on those results.

MATERIAL AND METHODS

I have been using and recommending Dental Herb Company's two products (Tooth & Gum Tonic and Under the Gum Irrigant) with some of my nonsurgical periodontal program participants throughout the past 3 years. Results of this revealed that most of the patients using these products for their at-home subgingival irrigation procedures and oral hygiene regimens have been getting results I would classify as superior compared with other similar products tried.

The American Dental Association (ADA) Council on Dental Therapeutics has designated two different oral rinses for use as antimicrobials to receive their Seal of Acceptance. One of these is a product composed of essential oil derivatives and was the first nonprescription rinse to receive the ADA Seal in 1987. I chose to try the Dental Herb Company products because their ingredients are similar to the ADA-approved product, they are alcohol free, and because of research I read concerning antimicrobial effectiveness of essential oils.^{5,6} I wanted to use alcohol-free products due to potential cancer risks associated with alcohol-containing mouthrinses.^{7,8} Also these products contain pure essential oils rather than derivatives. In fact, I did not get desired results or possibly compliance by patients with the ADA-approved product. Throughout 17 years of providing nonsurgical periodontal treatment to patients, I have found many products to be ineffective or have unacceptable side effects, such as staining, taste alteration, undesirable taste, and difficulty mixing. All these have caused patients to discontinue use or request something different. These are the patients who were initially introduced to Under the Gum Irrigant as an alternative product more than 3 years ago. Since then, regular at-home use by the patient of the herbal Irrigant and Tonic in my practice's overall program has resulted in fewer complaints related to side effects (less than 10% of patients complain of a burning sensation), and what I have interpreted to be success in my goals to reduce bacteria counts. This has led to the Irrigant's increased use in patients with hard-to-control subgingival pathogenic bacterial populations. The results of using the Irrigant in an initial group of patients have been compiled in a quantifiable form that may not be familiar to many but are significant in relation to actually improving periodontal health.

PROCEDURES

Based on personal experience, eliminating or controlling the primary cause of periodontitis is most important for promoting healing. This is called disease management via bacterial control. Essentially, this is attempting to create conditions in the gingival crevice that allow the body to achieve equilibrium during tissue breakdown and regeneration processes. There are various methods for detecting the presence of pathogenic bacteria or their destructive by-products that indicate disease activity.⁹ Because most methods are relatively expensive, I chose to use the anaerobic culturing and sensitivity testing method of monitoring in only one case. I used

phase-contrast microscope evaluation of plaque samples for all the others in the initial case series evaluated during 1997 and 1998. Because there are very few consumable items to be used with this technique, the costs are minimal (practically pennies following the initial microscope purchase). The lack of economic incentive from any commercial interest to encourage its repeated use is probably why this method is not widely promoted for regular use. I still have and use daily the microscope I purchased in 1982 as well as two additional units. Costs for these units vary, depending on the sophistication desired, but they are extremely affordable based on the return that can be created with proper use. This is especially true compared with current big-ticket items, such as air abrasion, digital radiography, or intraoral cameras. Thus, a rapid, chairside, inexpensive method of bacterial evaluation (for dentist and patient) enabled me to evaluate the effectiveness of a new antimicrobial agent. Because it was somewhat different from, yet similar to, a currently available ADA-approved product, the new antimicrobial Irrigant could be offered as an ethical treatment option.

In 1995, I became aware that Bernard Schechter, DDS, had been working on these formulae. He was a full-time practicing dentist with more than 20 years experience with herbal studies and working with patients using the phase-contrast microscope. He began developing these products as an alternative to what was commercially available to create something more effective and more agreeable for patient use. I recognized that the Tooth & Gum Tonic and Under the Gum Irrigant had similar but different properties. My initial interest was with the Irrigant.

A computer scan of my records from 1997 and 1998 turned up 58 patients who had purchased the Irrigant. A breakdown of the results these patients achieved with bacterial control was the most significant factor in determining success or failure concerning their use of the Irrigant. As stated, this was not a scientifically controlled double-blind study, but it may be even more useful to the average dental practitioner because it is practice-based information. These results are what dentists should expect to achieve when applying the products in any practice on a daily basis for at home use — not under special lab conditions.

I have established a protocol that sets aside a separate appointment to diagnose a patient's periodontal condition. In addition to performing diagnostic steps, my staff and I spend generous amounts of time at this appointment customizing hygiene instruction for patients' specific conditions. Plaque

samples taken from the deepest pockets are analyzed and viewed using a phase-contrast microscope/ video monitor setup. These samples reveal diagnostic and motivating images for patients and practitioners. To quantify the sample, we try to find the most active area of motile bacteria, primarily small and large spirochetes and motile spinning, small and large rods within a given sample. An approximate count is then made of the various forms by shape and motility.³ Numerical equivalent values are then assigned to these counts, which allow for follow-up and relative comparisons to be made. A decreased number of these motile bacteria indicates an improving gingival health status.

RESULTS

Of the 58 patients previously mentioned, a review of their individual charts revealed the results shown below based on the analysis of their patient records and bacterial counts recorded at two consecutive microscopic plaque evaluation appointments.

The first or baseline bacterial reading was taken before the patient was instructed in the use of the Irrigant. Some of the patients were in the maintenance phase of treatment using other solutions for irrigation and not achieving acceptable control. Some were in various phases of treatment and to gain better bacterial control, they were introduced to irrigation. Some were at the initial diagnostic appointment.

The comparisons were made with the next microscopic plaque evaluation done during the patient's normally scheduled visit. Some of the second readings of subgingival plaque samples were only a few weeks between intratreatment scaling and root planing appointments; some readings were after all scaling and root planing had been completed; and some were at typical recall intervals of 2, 3, and 4 months. The timing of plaque sampling is not critical. The important fact to consider is that the pathogenic bacterial counts are decreasing relative to previous readings of no change or high counts. Long-term periodontal health can be assured by this method of evaluation. This is superior to the system of waiting for pockets (ie, tissue destruction) to recur before more aggressive measures are taken.

In my observations of these 58 patients, I noted the following results:

- Two patients were not in treatment; they just purchased the Irrigant.
- Six patients stopped treatment; they did not return for follow-up.
- Fourteen patients showed no change in bacterial counts.

- Thirty patients showed an overall decrease in bacterial counts.
- Six patients showed an overall increase in bacterial counts.

An analysis of these figures as to the initial effectiveness of the Irrigant's ability to control bacteria based on beginning bacteria counts of the study patients and subsequent evaluations of these same patients during the course of their in-office treatment, provided 50 patients whose results can be reported. A compelling 60% of patients who experienced declines of bacteria counts, some with only a few weeks of subgingival irrigation at home and others with long-term use, is a significant amount. This majority of patients reporting with immediate follow-up bacterial decreases is notable because it is almost entirely attributable to the patients' home regimen, not the long-term effects that we might see from the scaling and root planing. Even more remarkable is that, in this or any approach, patient compliance with the hygiene instruction as directed may be difficult to achieve initially. This may explain why some of the patients experienced no change or an increase in their bacterial counts. Also, some of those were known to be smokers (as were some in the decrease group) and were harder to manage.

DISCUSSION

Many authors describe the patient's role in dental health as "good oral hygiene." When fighting a disease, this is not enough. The procedures must be defined. We implement what we call "Extreme Hygiene" throughout the hygiene department in my dental practice. Thorough physical cleaning of all oral tissues using manual or electric brushes is covered. Every patient in our recall and perio programs has the plaque cleaned from their tongue in the office. We then recommend they do this daily with a tongue cleaner (Oolit) that comes in three different designs. Research has shown and I firmly believe that effective soft tissue and especially tongue cleaning is extremely important in reducing the potential for reinfection of the soft and hard tissues of the mouth.¹⁰ By helping reduce the bacterial burden on tissues, the effects of any antimicrobial agent may be enhanced.

Another aspect of periodontal treatment protocol recently brought to light is the practice of scheduling several appointments for scaling or surgery of different quadrants weeks apart. This may be allowing reinfection of already treated tissues. Future consideration for scheduling may require that all treatments of bacterially infected pockets be done within a specified and limited time frame. Again, the important fact to note

here is the pocket is infected by certain bacteria and if they are not being monitored, in either a surgical or a nonsurgical treatment program, the outcomes are left to chance. I have seen cases treated that looked great clinically after initial treatment, then began to go rapidly downhill. If proper bacterial monitoring is done, these cases will be caught and measures can be taken to reverse the reinfection even before such clinical signs as bone loss and deepening of pockets begin to become apparent. In my review of the cases where the Irrigant was used, I have looked at the clinical parameter of bacterial counts. I have not made an in-depth review of the effects of this solution relative to the more common parameters of pocket depths, bleeding on probing, or gingival contours.

CONCLUSION

The at-home use of the Irrigant significantly improved bacterial counts of the majority of these cases. There was less bleeding, significant improvement in the texture and tightness of the tissues to the teeth, and numerous patients reported their mouths felt significantly better. It now appears that the ultimate weapon in controlling oral infections may be subgingival irrigation by the patient on a daily basis with a suitable antimicrobial and tissue conditioner/rebuilder that is economical and comfortable for the patient. Until now, I have had to use several products to satisfy all of those requirements. My staff and I do not hesitate to recommend the Tonic or the Irrigant for many conditions we see regularly. If anyone is interested in practicing some evidenced-based dentistry, this may be a good place to start to revitalize that hidden scientist that was in all of us the day we stepped out of dental school.

The ultimate goal all dentists are striving for is to find what frequently works best for their patients and helps maintain oral and overall health with the least adverse effects. I find it puzzling that the majority of dentists have been able to continue throughout the years only providing surgical treatments that essentially remove the evidence of the disease process, satisfying their sense of responsibility that they have done all they can do. The time has come for dentists to question everything they do and search for better ways rather than blindly following what has always been done or what the insurance company will approve. Evidenced-based clinical practices are truly the future of dentistry and may actually be initiated by third-party components if clinicians do not activate these protocols.

It is my assertion and observation that dentists must accept the fact that

most of the dental diseases they are responsible for treating are infectious diseases caused by transmissible bacteria. Dentists should be actively engaged in monitoring or measuring the bacteria at the earliest possible stages of the disease process. If this is done, they will be more likely to achieve the best possible results and know if the treatments employed are successful before more destruction can occur. With current research showing the relationship of oral pathogens and systemic disease, it is imperative that dentists accept the responsibility inherent in adopting these new approaches to finding solutions to their patients' dental problems. If not, the profession may lose the control over its destiny that it has enjoyed throughout the past 100 years. ♦

Disclosure

Dr. Parrett has no financial interest in and receives no remuneration from Dental Herb Company.

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