

No clear economic benefit from using a chlorhexidine chip for treating chronic periodontitis

Original Article:

Henke CJ, Genco RJ, Killoy WJ, Miller DP, Evans CJ, Finkelman RD. An economic evaluation of a chlorhexidine chip for treating chronic periodontitis: the CHIP (chlorhexidine in periodontitis) study. J Am Dent Assoc 2001;132:1557-69.

- **Level of Evidence:** I
- **Purpose:** To evaluate the economic outcomes associated with the use of a chlorhexidine chip
- **Source of Funding:** AstraZeneca LP, the former distributor of PerioChip 2.5 mg
- **Type of Study/Design:** Randomized controlled trial

SUMMARY

SUBJECTS

A total of 484 patients with chronic periodontitis enrolled from 52 general dental practices across the United States. Approximately 55% of the patients were male, 87% were Caucasian, 32% were smokers, and most were less than 60 years old. Patients needed to have at least 2 quadrants with periodontitis (1 or more pockets; 5 mm).

TREATMENT

Patients were randomly assigned to scaling and root planing

plus the PerioChip in pockets deeper than 5 mm or scaling and root planing without PerioChip.

OUTCOME

Total dental charges.

MAIN RESULTS

Total dental charges were significantly higher for patients receiving both scaling and root planing and PerioChip (\$1,568; standard deviation, 109) than for patients receiving scaling and root planing without PerioChip

(\$1,393; standard deviation, 109) ($P < .027$). Periodontists blinded towards the treatment received recommended similar additional surgical procedures for both groups.

CONCLUSIONS

In general practice, routine use of CHX suggests that cost will be partially offset by reduced surgery over at least 1 year.

ANALYSIS

Cost-effectiveness studies may help in assessing the usefulness of periodontal treatments. Increasingly, local antimicrobials and local antibiotics are recommended on a routine basis, and little is currently known as to what extent these treatments affect on the cost of care or long-term outcomes such as tooth loss or quality of life. In this study, the cost per periodontal surgery avoided by using PerioChip routinely is \$2,777 per case. Whether dental insurers and/or patients are willing to pay the increased cost of PerioChip to avoid a periodontal surgical procedure is an important question raised by this study.

This was a well-conducted study from a health economics perspective. It is unusual to find a randomized study of 1-year duration that evalu-

ates economic outcomes. The study was appropriately designed in terms of attempting to model real-world practice, but the fact that patients and general dentists were not blinded to treatment assignment makes interpretation of the impact of the PerioChip difficult. Important strengths of the study were the large patient sample size, the use of randomized design, and blinding of the periodontist towards the treatment received. The blinded periodontists' recommendations for further treatment did not differ between the groups. Finally, it is interesting to note that the results of this study were less favorable for CHX than a previous economic analysis that was conducted using modeling methods.¹

REFERENCE

1. de Lissovoy G, Rentz AM, Dukes EM, Eaton CA, Jeffcoat MK, Killoy WJ, et al. The cost-effectiveness of a new chlorhexidine delivery system in the treatment of chronic periodontitis. *J Am Dent Assoc* 1999; 130:855-62.

• Reviewer:

David Veenstra, PharmD, PhD, University of Washington, Seattle