Breath Effects of Three Marketed Dentifrices: A Comparative Study Evaluating Single and Cumulative Use

RESULTS

- Products containing either chlorhexidine or SnF$_2$ provided significant (one sided p<0.05) mean reductions versus the negative control across nearly all primary measures.
- Overall, reductions observed with chlorhexidine were generally greater than those seen with the SnF$_2$ system.
- The triclosan-containing product generated a significant mean reduction in one primary measure—sub-gingival, total facultative anaerobes.
- The essential oils antimicrobial system produced no significant reductions in any measure.
- Only chlorhexidine and SnF$_2$ systems produced directional (sig. at p<0.15) reductions in IL1-$eta$ levels.

CONCLUSION

- This study demonstrates the comparative breath efficacy of three dentifrices using a clinical model that may prove relevant for other dentifrice clinical trials.

OBJECTIVE

To evaluate the effects of three dentifrices on breath malodor using organoleptic grading and halimeter measurements.

MATERIALS AND METHODS

This was a randomized, examiner blind, parallel group study. 384 healthy adults with oral malodor were randomized to 1 of 4 brushing groups:
- antimicrobial dentifrice with 0.45% stannous fluoride;
- antitartar dentifrice with 0.243% sodium fluoride and 5% pyrophosphate;
- antimicrobial dentifrice with 0.24% sodium fluoride and 0.30% triclosan/copolymer
- negative control, bottled distilled water.

Breath odor was measured over a five-day period using second-person organoleptic grading and measurement of volatile sulfur levels.

RESULTS

- Following treatment, adjusted mean organoleptic scores and volatile sulfur levels were lowest for the stannous fluoride dentifrice group, with this group exhibiting superior breath quality compared to the negative control at three hours after a single brushing, and again at all cumulative use time points.
- While all test dentifrices showed some activity, only stannous fluoride had a second-person (organoleptic) breath benefit.
- Breath effects for the other two dentifrices were limited to reductions in volatile sulfur levels at hours 99 and 104 for the antitartar sodium fluoride pyrophosphate dentifrice, and at hour 99 only for the antimicrobial sodium fluoride triclosan/copolymer dentifrice.

Products containing either chlorhexidine or SnF$_2$ provided significant (one sided p<0.05) mean reductions versus the negative control across nearly all primary measures.

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