

# Treating Cigarette Smoking with Smokeless Tobacco: A Flawed Recommendation

Douglas E. Jorenby, PhD, Michael C. Fiore, MD, MPH, Stevens S. Smith, PhD,  
Timothy B. Baker, PhD

In this issue of the *Journal*, Drs. Tilashalski, Rodu, and Cole present the results of a pilot study in which 63 participants attempted to use smokeless tobacco to stop smoking cigarettes. The authors report an overall "switch rate" of 25%. Smokeless tobacco is presented as a harm reduction strategy for "inveterate smokers," whom the authors presume will be unable to quit smoking using any other sort of therapy. The authors assert that smokeless tobacco is an appropriate alternative for inveterate smokers because its adverse health effects are only about 2% of those of smoking (1).

Based on the results of their pilot study, Tilashalski et al call for a full evaluation in a controlled trial of smokeless tobacco as a smoking cessation treatment (1). While the reported switch rate of 25% appears impressive, it is important to recall that the sample was comprised of highly motivated volunteers with neither a control population nor random assignment to treatments. Nonspecific factors may have inflated the outcome measure, making it weak evidence to motivate a larger study. Several non-tobacco smoking cessation therapies have produced equally impressive 1-year cessation outcomes with the more rigorous use of random assignment and placebo controls. These include the nicotine patch (24.8% to 27.5%) (2-4), bupropion (23.1%) (5), and nicotine nasal spray (26%) (6). It would be shortsighted to devote scientific effort to smokeless tobacco when other, safer treatments appear more promising (7).

The ultimate outcome of the proposed research would be the chronic use of smokeless tobacco instead of habitual smoking. There are at least four serious flaws to this aim. First, smokeless tobacco is far from benign. Whereas cigarette smoking is associated with much higher rates of lung cancer, smokeless tobacco users have as much as 50 times the incidence of cancer in the oral cavity, nasal cavity, pharynx, and esophagus, as well as increased risk of pancreatic and bladder cancer (8). Oral cancers caused by

smokeless tobacco may remain undetected for several months—a particular concern, given their often aggressive rate of growth (9). Oral lesions are quite common, even among athletes who may only use smokeless tobacco during a sporting season; leukoplakia, loosening of teeth, and irreversible gingival recession are also common sequelae of smokeless tobacco use (10). Moreover, as with cigarettes, smokeless tobacco produces dependence and withdrawal symptoms upon abrupt cessation; relapse rates are high among those attempting to quit using smokeless tobacco (11).

Second, as noted above, there are better and safer treatments available to help people successfully eliminate tobacco from their lives. The Agency for Health Care Policy and Research (AHCPR) *Smoking Cessation Clinical Practice Guideline* found that nicotine gum produced 12-month cessation rates 1.4 to 1.6 times those of placebo, while nicotine patches increased sustained abstinence by a factor of 2.1 to 2.6 times (12). These are very effective treatments with minimal side effect profiles. Tilashalski et al point out that neither nicotine patches nor gum produce rapid increases in peak blood levels of nicotine (1). While this is true, these treatments are nevertheless effective in reducing tobacco withdrawal symptoms (13). There are also several new smoking cessation pharmacotherapies that have become available in the last 18 months. Both nicotine nasal spray and nicotine inhalers have been approved by the US Food and Drug Administration (FDA) as safe and effective smoking cessation treatments. These delivery systems, and the nasal spray in particular, provide relief from tobacco withdrawal symptoms and more rapid increases in peak blood levels (6). The FDA also approved the first non-nicotine smoking cessation medication, bupropion (Zyban), which became available by prescription in the summer of 1997. A recent multicenter clinical trial has demonstrated that bupropion is an additional safe and effective treatment (5). More so than at any time in the past, clinicians now have a variety of pharmacologic agents and delivery systems to assist those who wish to quit smoking, without the need to expose such persons to the inherent risks of tobacco.

Third, it is probably premature to write off individuals as "inveterate smokers" on the basis of a few failed quit attempts. On average, the participants in this pilot study by Tilashalski and colleagues had made only 3.7 prior quit attempts (although there was a range of 0 to 15 attempts). National data indicate that the typical smoker requires 3

*Am J Med.* 1998;104:499-500.

From the Center for Tobacco Research and Intervention (DEJ, SSS, TBB), the Department of Medicine (DEJ, SSS), Section of General Internal Medicine, University of Wisconsin Medical School, and Department of Psychology (TBB), University of Wisconsin, Madison, Wisconsin.

Requests for reprints should be addressed to Dr. Douglas E. Jorenby, 1300 University Ave., Rm. 7278 MSC, Madison, Wisconsin 53706.

Manuscript received November 13, 1997 and accepted in revised form February 25, 1998.

to 5 serious quit attempts before achieving long-term abstinence (14). Without a control group of some type, it is impossible to determine how many of the study participants would have been able to quit smoking using a less hazardous, non-tobacco treatment.

Finally, it is important that clinicians not receive a mixed message regarding the health risks of tobacco. Suggesting that some forms of tobacco are acceptable is not only disingenuous, it may also result in fewer clinicians making the effort to help their patients quit using tobacco. The AHCPR *Guideline* provided strong, empirical proof that a variety of effective smoking cessation treatments exists. To have a significant public health impact, all tobacco users should be provided with specific assistance on effective cessation strategies.

In terms of the call for additional research into smokeless tobacco as a therapy, scarce scientific resources may be directed elsewhere with greater benefit. For example, little work has been done on the combined use of different nicotine replacement delivery systems (eg, combined use of nicotine patches and gum), or use of nicotine and non-nicotine therapies (bupropion combined with an on-demand nicotine product such as the nasal spray or inhaler). Longer courses of treatment are also worthy of investigation, particularly for those persons who appear to experience atypical withdrawal. A limited number of studies using nortriptyline (15) or bupropion (5) suggest that non-nicotine agents that influence postcessation mood states may also have therapeutic benefit that we are only now beginning to explore.

In sum, multiple effective pharmacotherapies for smoking cessation now exist, and these carry far fewer health risks than smokeless tobacco. Consistent with this position against the use of smokeless tobacco, William S. TenPas, DMD, president of the American Dental Association, recommended that "this questionable smoking cessation tactic [smokeless tobacco] should be disregarded by health professionals and the public" (16). The focus of smoking cessation clinical research would be better directed at identifying and developing smoking cessation pharmacotherapies that are not only effective, but also safe.

## REFERENCES

1. Tilshalski K, Rodu B, Cole P. A pilot study of smokeless tobacco in smoking cessation. *Am J Med.* 1998;104:456-458.
2. Sachs DPL, Sawe U, Leischow SJ. Effectiveness of a 16-hour transdermal nicotine patch in a medical practice setting, without intensive group counseling. *Arch Intern Med.* 1993;153:1881-1890.
3. Buchkremer G, Bents H, Horstrann M, et al. Combination of behavioral smoking cessation with transdermal nicotine substitution. *Addict Behav.* 1989;14:229-238.
4. Hurt RD, Dale LC, Fredrickson PA, et al. Nicotine patch therapy for smoking cessation combined with physician advice and nurse follow-up: one-year outcome and percentage of nicotine replacement. *JAMA.* 1994;271:595-600.
5. Hurt RD, Sachs DPL, Glover ED, et al. A comparison of sustained-release bupropion and placebo for smoking cessation. *NEJM.* 1997;337:1195-1202.
6. Sutherland G, Stapleton JA, Russell MAH, et al. Randomized controlled trial of nasal nicotine spray in smoking cessation. *Lancet.* 1992;340:324-329.
7. Warner KE, Slade J, Sweanor DT. The emerging market for long-term nicotine maintenance. *JAMA.* 1997;278:1087-1092.
8. Winn DM. Surveillance of and knowledge about cancer associated with smokeless tobacco use. *NCI Monographs.* 1993;2:11-18.
9. McGuirt WFT, Wray A. Oral carcinoma and smokeless tobacco use: a clinical profile. *NCI Monographs.* 1993;2:91-95.
10. Robertson PB, Ernster V, Walsh M, et al. Periodontal effects associated with the use of smokeless tobacco: results after 1 year. *NCI Monographs.* 1993;2:78-86.
11. Hatsukami DK, Gust SW, Keenan RM. Physiologic and subjective changes from smokeless tobacco withdrawal. *Clin Pharmacol Therapeut.* 1987;41:103-107.
12. Fiore MC, Bailey WC, Cohen SJ, et al. *Smoking Cessation.* Clinical practice guideline no. 18. Rockville, Md: US Department of Health and Human Services, Public Health Service, Agency for Health Care Policy and Research. AHCPR publication no. 96-0692, April 1996.
13. Jorenby DE, Keehn DS, Fiore MC. Comparative efficacy and tolerability of nicotine replacement therapies. *CNS Drugs.* 1995;3:227-236.
14. US Department of Health and Human Services. *The Health Benefits of Smoking Cessation: A Report of the Surgeon General.* Washington, DC: Public Health Service, Office on Smoking and Health. DHHS publication no. 90-8416, 1990.
15. Humfleet G, Hall S, Reus V, et al. The efficacy of nortriptyline as an adjunct to the psychological treatment for smokers with and without depressive histories. In: Harris LS, ed. *Problems of Drug Dependence 1995.* Proceedings of the 57th Annual Scientific Meeting, College on Problems of Drug Dependence, Inc. NIDA research monograph 162. Washington, DC. Government Printing Office; 1996;334. Abstract.
16. TenPas WS. Smokeless tobacco. *Oral Surg Oral Med Oral Path.* 1996;81:376-377.