Residential treatment for smokeless tobacco use: A case series

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Abstract

We developed and implemented a novel 8-day residential treatment program for smokeless tobacco (ST) use. A multidisciplinary team delivered behavioral treatment, nicotine patches were adjusted to achieve 100% replacement of baseline peak serum nicotine concentrations, and bupropion sustained-release was prescribed. Mean participant age (±SD) was 47.4 ± 18.2 years. Mean nicotine patch dose at program end was 43.2 mg/day ± 13.9 (range 14 to 66 mg/d). Median percent replacement by serum nicotine concentrations was 86.6% (IQR: 75–113.8%). At 1 year, the biochemically-confirmed (urine anabasine < 2.0 ng/mL) self-reported 7-day point prevalence tobacco abstinence rate was 58% (14/24). A residential treatment program for ST users may be effective. More research is needed to replicate our findings and determine if comparable abstinence rates can be achieved with outpatient ST treatment programs using similar behavioral and pharmacotherapies.

Keywords: Residential treatment; Smokeless tobacco; Bupropion; Tobacco use cessation; Behavioral therapy

1. Introduction

Smokeless tobacco (ST), which refers to chewing tobacco and moist snuff, is a known human carcinogen posing significant health risks (U.S. Department of Health and Human Services, 2002). According to the National Household Survey on Drug Abuse, an estimated 7.3 million individuals older than 12 years of age (3.2%) in the U.S. are current ST users (Substance Abuse and Mental Health Services Administration [SAMHSA], 2002). The prevalence of current ST use is 5.4% among 18 to 25 year olds, 3.0% among persons aged 26 or older, and 2.1% among youths aged 12 to 17 (SAMHSA, 2002). Rates of current ST use are higher in males than females (6.3% of males and 0.4% of females aged 12 or older) and among full-time employees (4.3%) compared to part-time workers (1.9%) or the unemployed (3.4%).

Behavioral interventions for ST use that include an oral examination with patient-specific feedback have demonstrated efficacy for improving tobacco abstinence rates (Andrews, Severson, Lichtenstein, Gordon, & Barckley, 1999; Masouredis et al., 1997; Severson, Andrews, Lichtenstein, Gordon, & Barckley, 1998). However, clear evidence of pharmacotherapy efficacy is lacking (Ebbert et al., 2003). Randomized, controlled trials of nicotine replacement therapy (NRT) using nicotine gum or nicotine patch have failed to increase long-term ST abstinence rates (Boyle, 1992; Hatsukami, Jensen, Allen, Grillo, & Bliss, 1996; Hatsukami et al., 2000; Howard-Pitney, Killen, & Fortmann, 1999). Furthermore, two randomized, controlled pilot studies of bupropion sustained-release (SR) for ST use failed to demonstrate a statistically significant increase in tobacco abstinence rates at 3 months (Dale et al., 2002; Glover, Glover, Sullivan, Cerullo, & Hobbs, 2002). No
interventions for ST use have assessed the efficacy of combining pharmacotherapy with a behavioral intervention that includes an oral examination.

The residential treatment setting allows for the integration of intensive behavioral therapy and tailored pharmacotherapy under the close supervision of a multidisciplinary team. While residential treatment programs for smokers have been observed to double the odds of smoking abstinence at 6 months compared with outpatient therapy (Hays et al., 2001), there are no published reports on residential treatment for ST use.

We designed and pilot tested an 8-day residential treatment program for ST use. The goals of the pilot were to: (1) assess program feasibility; (2) assess whether ST abstinence outcomes with residential treatment were similar to those achieved with residential treatment for cigarette smokers; and (3) acquire additional treatment experience with a population of tobacco users for whom there are few proven effective treatments. This report describes results from a case series of 24 participants enrolled in a residential treatment program for ST use.

2. Materials and methods

2.1. Setting

The ST residential treatment program was provided at the Mayo Clinic in Rochester, Minnesota. The Mayo Clinic is a multispecialty tertiary referral center. The Nicotine Dependence Center (NDC) at the Mayo Clinic has provided residential treatment to over 700 cigarette smokers since starting this clinical service in 1992.

2.2. Participants

The Mayo Clinic Institutional Review Board reviewed and approved this study. Individuals 18 years of age and older who were daily ST users for the past year were eligible for enrollment. Participants were recruited through press releases and patient contact letters. Eighty-two letters were mailed. Potential participants were screened by telephone for their ability to fully participate in and complete the program. Of the twenty-four participants recruited, five participants learned of the program from contact letters, five from NDC counselors, five through telephone calls made to the NDC regarding other studies, seven through media releases, and two through word of mouth.

2.3. Program structure

Both the program and medication were provided at no cost. Participants resided in a residential unit for all 8 days. The residential unit is a modified hospital floor that participants can enter and leave freely with private rooms, a dining hall, an exercise equipment room, and a lecture hall. The unit was attended by NDC staff 24 h per day. The treatment model was adapted from a residential program for cigarette smokers (Hurt et al., 1992). A multidisciplinary team provided care and was comprised of nicotine dependence counselors, psychologists, dental hygienists, physical therapists, and physicians.

The program structure included daily team rounds, individual and group therapy sessions, didactic sessions, and individual and group activities. Topics covered in the didactic sessions included medical aspects and consequences of ST use, relapse prevention, stress management, anger management, family issues regarding recovery, nicotine and chemical dependence, nutrition, and oral health care.

Upon entry, participants underwent a medical history, interview, and a physical examination by a physician. Dental cleaning and bitewing radiographs were performed in the dental department, and a periodontal specialist conducted oral examinations for mucosal and periodontal lesions. If oral pathology was evident, photographs were taken and reviewed with the participants.

2.4. Behavioral therapy

Participants received individual and group counseling sessions. The transtheoretical model of change (Prochaska & DiClemente, 1983), the social learning and self-efficacy theories (Bandura, 1977, 1997) and a cognitive-behavioral relapse prevention model (Marlatt & Gordon, 1985) provided the theoretical background for session content. The counselors worked with each participant to identify motivation and confidence for quitting ST, and to identify the social, environmental, physical, and emotional factors associated with tobacco use. Participants learned and rehearsed cognitive and behavioral strategies for managing urges, withdrawal symptoms, negative emotions, and high-risk situations. Motivational interviewing techniques were also employed, such as encouraging participants to strategize methods, eliciting self-motivational statements, and avoiding confrontation of resistance. Each participant developed an individualized relapse prevention plan. Group sessions involved group members assisting each other in problem-solving for barriers to tobacco abstinence, enhancing motivation to quit and maintain abstinence, discussing relapse prevention plans, providing empathy and group support, and sharing of common experiences, consequence, and concerns regarding ST use and being tobacco abstinent.

2.5. Oral examination

Participants received personalized feedback about tobacco-induced oral changes from the dental hygienists and periodontal specialists. Photographs of oral mucosal changes and bitewing radiographs provided an opportunity
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