Smoking Cessation in Outpatient Alcohol Treatment

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Abstract

Objective: This study examined the effect of a smoking cessation intervention on alcohol abstinence. Veterans (n = 40) in an outpatient substance abuse treatment program were randomly assigned to intervention and control groups.

Methods: The intervention consisted of 5 weekly education and group therapy sessions. A repeated measure design was used to compare outcome measures of smoking cessation and sobriety from alcohol in 2 groups (control, intervention) at baseline, 2 weeks, 1 month, 6 months, and 12 months.

Results: There was a trend in the direction of greater alcohol use in the intervention group, but differences were not statistically significant at 6 and 12 months. Reported smoking abstinence rates were similar through 6-month follow-up. However, a statistically significant proportion of control participants reported being off cigarettes for at least 24 hours at 6-months.

Conclusion: These preliminary data suggest additional studies are needed to determine the effect of smoking cessation on alcohol abstinence.

Addict Disord Their Treatment 2003;2:41–46.

The treatment of cigarette smoking in alcoholics remains problematic. While cigarette use has decreased to 25% in the general population, alcoholics are notable for their lack of response to public health and other measures to diminish cigarette use. Approximately 80% of alcohol dependent patients smoke cigarettes.[1,2] Heavy cigarette use is predictive of unrecognized alcohol abuse/dependence.[3] The concomitant use of tobacco and alcohol results in an increased incidence of head and neck cancers, cirrhosis, and pancreatitis.[4] Tobacco, not alcohol, has been shown to be the leading cause of death among previously treated alcohol dependent patients.[5]

In the alcohol treatment community there has been a reluctance to address nicotine use in the same way cocaine or opiate use is addressed. The belief that discontinuing both alcohol and nicotine use is "too much" and will result in relapse to alcohol is commonly perpetuated in alcohol treatment programs. The personnel of alcohol treatment programs are frequently recovering alcoholics who continue to smoke. Treatment personnel who continue to smoke are one-half to one-third as likely to provide counseling on smoking cessation as those personnel who have never smoked.[6]

Recent studies have begun to explore the relationship between alcohol treatment and cigarette smoking cessation. It has been demonstrated that long-term (10-year) abstention from alcohol and smoking are highly correlated.[7] In inpatient substance abuse treatment programs smoking bans with and without counseling and nicotine replacement have been evaluated.[8–10] Bobo et al showed that simultaneous treatment of alcohol and tobacco in residential settings did not jeopardize the participants' recovery from alcohol.[11] These studies suggest that smoking cessation efforts in inpatient and residential settings do not diminish the efficacy of alcohol treatment and lead to an overall health benefit in terms of smoking cessation.

Our study examined the feasibility and efficacy of an intervention for smoking cessation in outpatients who were in alcohol treatment. The purpose was to determine if a smoking cessation intervention in veterans undergoing outpatient alcohol treatment would be safe and not detrimental to alcohol treatment.

Materials and Methods

The Omaha Veterans Administration (VA) Medical Center Substance Abuse Treatment Center (SATC) is a comprehensive drug/alcohol evaluation and treatment program. At the time of this study it had both inpatient (approximately 200 admissions per year) and outpatient

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Supported by Grant # 99-07B from the Nebraska Department of Health and Human Services Cancer and Smoking Disease Research Program.

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programs. Patients enrolled in the study had either inpatient treatment followed by outpatient treatment of 6–12 months or were directly admitted to outpatient treatment and underwent no inpatient treatment of their alcoholism. Patients enrolling in the outpatient program with a diagnosis of alcohol abuse or dependence were evaluated for study participation.

Alcoholics in outpatient treatment were recruited since prior studies had evaluated smoking cessation efforts in inpatient or residential alcohol programs. Eligibility criteria included meeting Diagnostic and Statistical Manual of Mental Disorders–IV criteria for alcohol abuse/dependence, smoking at least 10 cigarettes per day, and willingness to provide names and addresses of at least 2 collateral informants. Subjects with a diagnosis of schizophrenia were excluded from the study. Study subjects signed an informed consent and followed a study protocol approved by the Omaha VA Medical Center Human Studies Subcommittee.

Subjects were randomly assigned to the control and intervention groups. All study participants completed a baseline questionnaire addressing their drinking and smoking histories, Addiction Severity Index (ASI), Fagerström Tolerance Test, and Center for Epidemiologic Studies Depression Scale (CES-D). The intervention consisted of 5 weekly education and group therapy sessions and carbon

Table 1. Baseline characteristics

Variable	Control	Intervention
Total (N)	20	20
Male (%)	85 (17/20)	100 (20/20)
Age (mean)	44	45
Ethnicity (%)		
Caucasian	65 (13/20)	65 (13/20)
Hispanic	0	5 (1/20)
Black (not Hispanic)	35 (7/20)	30 (6/20)
Years smoked cigarettes (%)		
11 to 20 years	25 (5/20)	30 (6/20)
21 to 30 years	45 (9/20)	50 (10/20)
31 or more years	30 (6/20)	20 (4/20)
Cigarettes smoked per day (%)		
At least 10	5 (1/20)	5 (1/20)
11 to 20	30 (6/20)	45 (9/20)
21 to 30	45 (9/20)	35 (7/20)
31 or more	20 (4/20)	15 (3/20)
Fagerström score (%)		
0–2 Very low	5 (1/20)	15 (3/20)
3–4 Low	25 (5/20)	10 (2/20)
5 Medium	15 (3/20)	15 (3/20)
6–7 High	25 (5/20)	45 (9/20)
8–10 Very high	30 (6/20)	15 (3/20)
Prior substance abuse treatment (%)	90 (18/20)	80 (16/20)
Quit smoking attempts (%)		
Never	21.1 (4/19)	40 (8/20)
1	31.6 (6/19)	15 (3/20)
2	10.5 (2/19)	5 (1/20)
3	5.3 (1/19)	5 (1/20)
4	5.3 (1/19)	10 (2/20)
5	15.8 (3/19)	10 (2/20)
10 or more	10.5 (2/19)	15 (3/20)
ASI (alcohol composite score; M ± SD)	0.525 (0.287)	0.453 (0.261)

No significant between group differences found ($P > 0.2$).

Table 2. Relapse to alcohol drinking

Variable	Control	Intervention
Had even one drink (%)		
2 weeks	6.3 (1/16)	13.3 (2/15)
1 month	17.6 (3/17)	38.5 (5/13)
6 months	35.3 (6/17)	38.5 (5/13)
12 months	43.8 (7/16)	53.8 (7/13)
Had more than one drink (%)		
2 weeks	0.0 (0/17)	6.7 (1/15)
*1 month	0.0 (0/16)	33.3 (4/12)
6 months	13.3 (2/15)	33.3 (4/12)
12 months	40.0 (6/15)	53.8 (7/13)
Had several drinks on one occasion (%)		
2 weeks	0.0 (0/17)	6.7 (1/16)
1 month	6.3 (1/16)	25.0 (3/12)
6 months	3.3 (2/15)	27.3 (3/11)
12 months	26.7 (4/15)	50.0 (6/12)
Drank heavily in last 1–2 days (%)		
2 weeks	0.0 (0/17)	0.0 (0/17)
1 month	6.3 (1/16)	16.7 (2/12)
6 months	18.8 (3/16)	10.0 (1/10)
12 months	26.7 (4/15)	27.3 (3/11)

*Statistically significant between group difference ($P = 0.024$).

monoxide assessments. Education sessions (1/2 hour) addressed nicotine dependence as an addictive disorder, nicotine withdrawal, nutritional issues, exercise/relaxation training, and pulmonary and other medical complications of cigarette use. One-hour group therapy sessions followed each lecture to process information obtained in lectures and to provide support. Carbon monoxide assessments were completed weekly at each group session. An 8-week trial of nicotine replacement (gum or patch) was offered to intervention group members unless contraindicated. Subjects were not, however, required to use nicotine replacement.

Subjects assigned to the control group were treated in the standard fashion for their alcohol use disorder and were not discouraged from attempting to discontinue smoking. They had access to the standard resources available for smoking cessation at the Medical Center (1 educational session and nicotine replacement).

Subjects in both the control and intervention groups participated in the same outpatient alcohol treatment program. This consisted of a thorough assessment and treatment planning process, individual and group therapy, education series, and 12-step meetings with a strong emphasis on "abstinence" and relapse prevention. Cigarette smoking was not allowed in any of the hospital group rooms but was allowed on a nearby smoking "deck" and at some of the community 12-step meetings.

Study participants were contacted at 2 weeks, 1 month, 6 months, and 12 months after enrollment. The 2-week follow-up was done to ensure that we had access to the subject's correct address and phone number. At 1-, 6- and 12-month time points subjects were asked to complete a questionnaire on current and recent use of alcohol, tobacco, and other drugs. To encourage retention and questionnaire completion, participants were reimbursed $10 at each assessment interval. Collateral informants were contacted by phone at 6 months and queried about the participant's alcohol, tobacco, and other drug use. The majority of participant and collateral assessments were in agreement.

Interval/ratio data collected over time was compared using 1 way repeated measure Analysis of Variance. A two-sample t test was used to determine differences between control and intervention groups at follow-up intervals. For nominal data χ^2 analysis was used. If the assumption of at least 80% cells having expected count less than 5 was violated, Fisher exact test of significance was used. All the analysis was done using the SPSS statistical software package.

Results

Approximately 130 persons were invited to participate in this study. Forty-two subjects chose to enroll in the study.

Table 3. Use of drugs other than alcohol*

Variable	Control	Intervention
Amphetamines		
2 weeks	0	0
1 month	0	0
6 months	7.1 (1/14)	0
12 months	6.7 (1/15)	0
Benzodiazepines/Barbituates		
2 weeks	0	0
1 month	0	0
6 months	0	0
12 months	6.7 (2/15)	0
Hallucinogens		
2 weeks	0	0
1 month	0	0
6 months	0	0
12 months	13.3 (2/15)	9.1 (1/11)
Heroin		
2 weeks	0	0
1 month	0	0
6 months	7.1 (1/14)	0
12 months	6.7 (1/15)	0
Cocaine/Crack		
2 weeks	0	0
1 month	13.3 (2/15)	9.1 (1/11)
6 months	21.4 (3/14)	0
12 months	13.3 (2/15)	9.1 (1/11)
Marijuana		
2 weeks	0	0
1 month	6.7 (1/15)	9.1 (1/11)
6 months	28.6 (4/14)	0
12 months	20.0 (3/15)	18.2 (2/11)

*All numbers indicate % of subjects in each group that reported using the substance during the preceding study interval.

At enrollment, 21 patients were randomized to the control group and 21 to the intervention group. One control group subject was later diagnosed with schizophrenia and deemed ineligible to continue. One intervention group participant voluntarily withdrew. **Table 1** characterizes the study participants. Of note, the study subjects were predominantly male and Caucasian. Their mean age was 45. They tended to be long term, heavy smokers with Fagerström scores reflecting "high" or "very high" dependence. The majority of participants reported prior substance abuse treatment and most had made prior attempts to quit cigarette smoking. Six participants in the intervention group (30%) and 10 in the control group (50%) were prescribed nicotine patch or gum during the treatment interval. One person in each group was prescribed bupropion.

Since the data collected was pilot data, a less conservative level of significance was used. The alpha level of significance was fixed at 0.2. There were no significant differences between the control and intervention subject in ethnicity, gender, years of cigarette smoking, cigarettes smoked per day, Fagerström score, history of prior treatment of alcohol/drug use problems, or number of prior serious attempts to discontinue smoking ($P > 0.2$).

Our first hypothesis, that treatment of cigarette smoking while in an outpatient alcohol treatment program would not alter alcohol use rates, was not clearly substantiated by our study. All but 1 of the variables consistently showed a trend to increased drinking in the intervention group (**Table 2**). At 1 month there was a statistically significant increase in having "had more than one drink" for the intervention group. However, the variable "drank heavily in last 1–2 days" showed no heavy drinking in either group at 2 weeks and a trend to less drinking in the intervention group at 6 months.

Drug use, other than alcohol, in the 24 hours prior to follow up interview was not significantly different at 2 weeks, 1 month, 6 months, or 12 months ($P > 0.2$) (**Table 3**).

Our second hypothesis, that smoking cessation treatment in an outpatient alcohol program would increase cigarette smoking cessation rates, was not substantiated by our study. In **Table 4**, resumption of cigarette use data is presented for 2-week, 1-month, 6-month, and 12-month periods. There was no significant difference at any time point assessed between the control and intervention groups when asked about cigarette use in the past 7 days ($P > 0.2$). Similarly, subjects showed no statistically significant difference when assessed for return to smoking when off cigarettes for at least 24 hours ($P > 0.2$). When asked about a 24-hour period of abstinence from cigarettes in the previous month, the intervention and control group showed no statistically significant difference ($P > 0.2$) at 2 weeks, 1 month, and 6 months. However, at the 12-month end point, the difference was statistically significant ($P = 0.051$).

Discussion

This study was a pilot study meant to assess the efficacy of a smoking cessation effort in an outpatient alcohol treatment population. This study demonstrated that an intervention aimed at smoking cessation in outpatient alcoholics did not significantly alter alcohol use rates at 6 months and 12 months. The intervention employed in the study did not enhance cigarette smoking cessation rates. There are several issues that bear discussion.

The challenges of adding an additional group and lecture session to attendance at a standard outpatient treatment program were clearly evident. Participating in the intervention necessitated that subjects attend additional lectures and group therapy sessions. While these sessions

Table 4. Resumption of cigarette use

Variable	Control	Intervention
Used cigarettes in past 7 days (%)		
2 weeks	87.5 (14/16)	78.6 (11/14)
1 month	86.7 (13/15)	63.6 (7/11)
6 months	92.9 (13/14)	88.9 (8/9)
12 months	93.3 (14/15)	100 (11/11)
Off cigarettes at least 24 hours (0%)		
2 weeks	43.8 (7/16)	28.6 (4/14)
1 month	46.7 (7/15)	63.6 (7/11)
6 months	50.0 (7/14)	66.7 (6/9)
[b]12 months	60 (9/15)	18.2 (2/11)
[a]Gone back to smoking (%)		
2 weeks	71.4 (5/7)	33.3 (1/3)
1 month	42.9 (3/7)	42.9 (3/7)
6 months	83.3 (5/6)	50.0 (3/6)
12 months	77.8 (7/9)	100 (2/2)

[a]Only calculated for subjects off cigarettes at least 24 hours since the last observation.
[b]Statistically significant difference between intervention and control.

were scheduled to minimize disruption to the subjects' work schedules and alcohol outpatient groups, subjects frequently did not attend. Only 6 of the 19 subjects attended all the required classes. Seven subjects attended none of the classes. Subjects reported transportation difficulties, family, and work demands as reasons for non-attendance. Many alcohol treatment patients are admitted as a result of DWI arrests/convictions and have lost their driver's license prior to admission. Asking this population to negotiate an additional trip to the medical center each week for 5 weeks appeared to be problematic. Additionally, alcoholics early in recovery frequently have tenuous relationships with their families and employers. An additional commitment could further jeopardize these relationships.

Next, the number of subjects lost to follow up was high. This is a very mobile population. Despite pursuing multiple strategies, study retention and follow up were problematic.

Last, while the return to alcohol use in the control and intervention groups was not statistically different at 6 and 12 months, there was a trend in the direction of greater alcohol use in the intervention group. One factor that might contribute to increase drinking in this arm of the study might be the stress created by the expectation of additional group attendance. Prior studies evaluating smoking cessation efforts in alcoholics in treatment were completed in inpatient or residential settings where the intervention did not require significant logistical commitment from the study subjects. Participants in the intervention arm of this study had greater additional commitments than participants in the control arm. This difference between the 2 groups may have contributed to the increased level of drinking in the intervention group.

We would intuitively expect that alcoholics in outpatient treatment of alcohol use disorders would have a similar response to smoking cessation efforts compared with their inpatient/residential counterparts. This intervention, however, may have demanded more commitment than the typical alcoholic in their early days of sobriety could maintain. A less intrusive intervention that also mandates pharmacologic aids in the same population may be more realistic and effective.

Acknowledgments

We acknowledge the support of the Nebraska Department of Health and Human Services Cancer and Smoking Disease Research Program. We also acknowledge the support of Dr. Fred Petty, Ms. Kelly Clark, and Ms. Sheryl Latenser in the preparation of this manuscript.

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