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ALCOHOL USE REDUCTION IN THE COURSE OF SMOKING CESSATION TREATMENT: A REVIEW



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Abstract

Given the well-established links between smoking and alcohol consumption, we began a literature review to assess the following: 1. the extent to which findings from clinical trials of nicotine replacement therapy (NRT) can be generalized to those with a current/past history of alcohol use disorders; 2. whether alcohol status affects smoking cessation outcome and 3. effects of smoking cessation on alcohol use. Just over half of the reports reviewed made mention of alcohol-related inclusion/exclusion criteria, with abuse being the most common criterion. Inclusion/exclusion criteria we described ambiguously in a high percentage of reports. Few studies reported any kind of findings concerning links between alcohol consumption and smoking cessation.

Introduction

- ❑ There is strong evidence of co-morbidity between smoking and alcohol use
 - ❑ Evidence from animal and human research points to common genetic and biochemical underpinnings for tobacco and alcohol use/dependence
 - ❑ These findings have stimulated recent interest in implications for treatment
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Co-Morbidity

- ❑ 44% of those who smoked in the last month reported at least one binge drinking episode during same time period¹
 - ❑ An estimated 74%-88% of those with substance abuse problems are also smokers²
 - ❑ Approximately 35% of those with alcohol use disorders can also be classified as nicotine dependent³
 - ❑ College student smokers are about 5 times more likely than non-smokers to be binge drinkers⁴
 - ❑ Significant correlations have been found between reported urges to smoke and urges to drink during exposure to alcoholic beverages in the lab^{5,6}
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Genetics/Biochemistry

- There is a substantial genetic correlation between alcohol and nicotine use and dependence^{7,8}
 - There are several possible mechanisms for alcohol/tobacco links including evidence that smoking is associated with diminishing effects of alcohol⁹ and an association between alcohol dependence and greater nicotine withdrawal¹⁰
 - A number of candidate genes may underlie both alcohol and nicotine dependence (e.g., alpha 4 nicotinic receptor gene)¹¹
 - Several neurotransmitters and receptors are involved in both alcohol and nicotine effects including GABA¹², dopamine¹³, serotonin¹⁴ and endogenous opioids¹⁵, these systems also likely influence risk of alcohol and nicotine dependence
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Potential Treatment Implications

- ❑ NRT is the primary pharmacotherapy for smoking cessation
 - ❑ Therefore, it is important to know whether NRT is efficacious for use in the large population of smokers who are heavy drinkers and those with past or current alcohol use disorders
 - ❑ Findings from NRT trials may not be generalizable to those with past/current alcohol use disorders due to exclusion criteria in place in clinical trials
 - ❑ If these findings are generalizable, they could help to determine what effect, if any, alcohol use status has on likelihood of smoking cessation
 - ❑ Findings from these trials could also help to address the issue of whether nicotine and alcohol use are substitutable or complementary substances
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The Present Study

Given the genetic/biochemical commonalities underlying smoking and drinking and the treatment implications of co-morbidity, we conducted a literature review to assess the following three issues:

1. The generalizability of findings in the NRT literature to heavy drinking smokers and those with current or past alcohol use disorders
 2. The extent to which alcohol status affects smoking cessation outcome
 3. The likelihood that smoking cessation will result in a reduction or increase in alcohol use
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Method

- We reviewed reports of nicotine replacement trials published in peer reviewed journals that were included in the recent Cochrane meta-analysis¹⁶
 - We looked for presence/absence of alcohol-related inclusion/exclusion criteria, type of criteria and clarity with which criteria were described
 - In addition, we searched for information about the impact of alcohol status on smoking cessation outcome and for reported effects of smoking cessation on drinking behavior in the course of trials
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Criteria for Inclusion in Review

- ❑ Comparison between NRT and placebo or no treatment or between different doses of NRT
 - ❑ Post-treatment follow-up had to be at least 6 months
 - ❑ Cessation rates had to be reported for trials to be included
 - ❑ Only reports published in peer-reviewed journals were included
 - ❑ Our review covers the trials published between 1992 and March 2004 that were included in the Cochrane Report
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Results

- Of 69 reports published in peer reviewed journals during this time period that were included in the Cochrane meta-analysis, 68 were included in the present review (one report could not be located)
 - Including reports of trials making use of multiple treatment modalities, the most common modality was the patch (utilized in 45 trials), followed by the gum (15 trials), inhaler (10 trials), spray (7), tablet (2) and the lozenge (1)
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Alcohol-Related Inclusion/Exclusion Criteria

- ❑ Alcohol-related exclusion or inclusion criteria were reported in 35 of the 68 trials (51%)
 - ❑ Only one paper reported alcohol-related inclusion criteria, the rest reported exclusion criteria only
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Types of Exclusion Criteria

Type of Criteria	Number of trials (percentage of the 34 w/exclusion criteria)
Alcohol abuse— past or present	20 (59%)
Alcohol dependence only— past or present	10 (29%)
Other ¹	4 (12%)

¹Alcohol problems of some kind (2), presence of an unstable alcohol disorder and alcohol misuse (1 each)

Clarity of Inclusion/Exclusion Criteria

- ❑ In 60% of trials reporting alcohol-related inclusion/exclusion criteria, there was ambiguity¹ in description of criteria
- ❑ In the 13 reports with clear exclusion criteria, time stipulations were as follows: no history whatsoever (2), the past year (5), the past six months (2), current/active disorder (4)

¹ Ambiguity meaning lack of clarity with respect to the substances in question, the time frame being evaluated (e.g., lifetime, past six months) and/or the precise criteria being utilized

Effects of Alcohol Status on Smoking Cessation

Two studies provided findings regarding effects of alcohol status on smoking cessation

- Croghan et al. (2003) reported no difference in smoking abstinence in a patch/spray trial based on lifetime alcohol dependence status
 - Hughes et al. (2003) reported findings with the patch in a sample of smokers with a history of alcohol dependence that closely resembled results from a prior trial in a sample that was otherwise similar but without a dependence history
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Effects of Smoking Cessation on Alcohol Use

Only **one** of the studies reported findings concerning effects of smoking cessation on alcohol use:

Hughes and colleagues (2003) found that in a sample of smokers with a past history of alcohol dependence, none of the participants relapsed to an alcohol use disorder while quitting smoking

Other Findings

- ❑ Patterson et al. (2003) reported that alcohol use at baseline did not predict attendance at sessions for a patch/spray trial
 - ❑ Wisborg et al. (2000) reported that pregnant smokers who enrolled in their patch trial did not differ in level of alcohol use from those who expressed interest but did not enroll
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Discussion

- ❑ Slightly over half of the trials reviewed reported alcohol-related inclusion/exclusion criteria
 - ❑ Abuse was the most common exclusion criterion
 - ❑ Alcohol-related inclusion/exclusion criteria were described ambiguously in a high proportion of reports
 - ❑ Only 4 of the papers included in this review reported any data regarding associations between smoking and alcohol use
 - ❑ Given recent interest in links between smoking and alcohol use, this trend of infrequent reporting may have improved since the end of the most recent Cochrane meta-analysis of NRT upon which this review was based (i.e., April 2004 to the present)
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Future Directions for Review

- ❑ Papers published in 1991 and earlier that were included in the Cochrane meta-analyses will be added to the review
 - ❑ Papers published since the cutoff date for the Cochrane meta-analysis (March 2004) will be added as well
 - ❑ The review will also be expanded to include bupropion trials
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Conclusions

- Exclusion of individuals with a past or current history of an alcohol use disorder may limit the generalizability of results from NRT trials to this substantial population of smokers
 - Only 2 published papers included in this review examined effects of alcohol use status on smoking cessation
 - Based on this review, it is not possible to come to a conclusion about effects of smoking cessation on alcohol use
 - Future studies should incorporate measures of alcohol use at intake and during treatment in order to evaluate the generalizability of results to those with varying alcohol use statuses and to improve our understanding of reciprocal relationships between alcohol use and smoking
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References and Correspondence

- References cited in the poster and papers included in the review are listed in the handout available from the presenter
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