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Treatment of Sleep Disturbance in Alcohol Recovery: A National Survey of Addiction Medicine Physicians

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Abstract

Sleep disturbance is common among patients in recovery from alcoholism and can precipitate relapse. Though sleep complaints are commonly managed with medication, little is known about their management among recovering alcoholic patients. We performed a postal survey of a self-weighted, random systematic sample of 503 members of the American Society of Addiction Medicine (ASAM) to examine addiction medicine physicians' medical management of sleep disturbance among patients in early recovery from alcoholism. After 3 mailings, 311 (62%) responded. Of respondents, 64% have offered pharmacological treatment to an insomniac, alcoholic patient in the first 3 months after detoxification, but only 22% offered medication to more than half of such patients. Trazodone was the preferred therapy, chosen first by 38% of respondents, followed by other sedating antidepressants (12%), and antihistamines (12%). The mean duration of therapy for trazodone and other sedating antidepressants exceeded one month. Experts in addiction medicine appear reluctant to prescribe medication to sleep-disturbed patients in early recovery from alcoholism. When they do prescribe, trazodone, other sedating antidepressants and antihistamines are favored, despite limited evidence for or against this indication. Although the treatment of disordered sleep among alcoholic patients in early recovery may have merit to prevent relapse, controlled studies of these sleep agents are needed.

Keywords

Sleep disturbance; insomnia; treatment; alcoholism

INTRODUCTION

Alcohol dependent persons commonly experience poor sleep during periods of heavy drinking and subsequent abstinence.¹ In a population-based study, approximately 18% of alcoholic persons reported sleep disturbance.² Rates of sleep disturbance are higher during periods of abstinence, affecting 25% to 60% of alcohol-dependent patients in early recovery.^{3–5} The sleep

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abnormalities that accompany both acute and chronic abstinence, along with alcohol's hypnotic effects and positive effects on sleep and mood,^{3,6} may contribute to craving and the urge to resume drinking among persons with chronic alcoholism.³ Abstinence-related polygraphic sleep abnormalities predicted relapse by three months in 80% of alcohol-dependent subjects in an alcohol treatment program.⁷ Sleep problems are also associated with anxiety and depression in early abstinence, disorders which themselves can lead to relapse.⁸

A recent study of 74 alcohol-dependent patients followed a mean of 5 months after alcohol treatment found that insomnia was a robust predictor of relapse: 60% of patients with baseline insomnia experienced recurrent drinking, compared to 30% of those without insomnia.^{4,9–11} The experience of Alcoholics Anonymous captures the role of poor sleep and resultant fatigue succinctly in the "T" of the acronym "HALT: don't get Hungry, Angry, Lonely, or Tired."¹² However, it is unknown whether treatment of sleep disturbance will lower the likelihood of recurrent drinking.^{13,14} Despite this lack of evidence and the controversial role of pharmacotherapy in relieving symptoms in recovering patients, anecdotes suggest that some physicians offer pharmacological treatment to insomniac, recovering alcoholic patients. Thus, we conducted a national survey to examine the extent to which experts in addiction medicine offer medication for sleep disturbance to patients in early recovery from alcoholism.

METHODS

Between June and September 2000, we mailed a one-page survey to a sample of members of the American Society of Addiction Medicine. From the American Society of Addiction Medicine 2000 Directory of Members, we drew a national random systematic sample of 532 from a population of 2,658 physicians. Of the 532 mailings, 11 could not be delivered. Of the remaining 521, 7 were retired, 7 no longer cared for patients, and 4 no longer practiced addiction medicine. Of the 503 mailings, 311 (62%) responded. Respondents to the three mailing waves had similar demographic and practice characteristics, and rates of pharmacological treatment of sleep disturbance in recovery, making response bias unlikely.¹⁵

Measures

Dependent Variables—We first assessed the percentage of patients in recovery from alcohol/abuse who report sleep problems in the first three months after detoxification to whom physicians recommend any medication, including over-the-counter and prescription. We created a dichotomous variable indicating ever recommending (> 0%) or never recommending (0%) medication to such patients. The primary outcome of interest was the physician's first choice of treatment for sleep disorders in alcohol-abusing or -dependent patients during the first three months after detoxification. Physicians were given a list of the names of possible medications, which were categorized *post-hoc* as over-the-counter antihistamine, prescription antihistamine, trazodone, another sedating antidepressant medication, nonbenzodiazepine, benzodiazepine, other sedating drug, or no first choice therapy. Because of small cell sizes, a nominal variable was created, with categories of antihistamine, trazodone, other sedating agent, or no first choice.

Independent Variables—Covariates assessed included physician demographic characteristics and practice patterns. Demographic variables included gender, age and race. Because of small cell sizes, race was not included in multivariate analyses. Physician specialties included psychiatry (reference group), internal medicine, family medicine or other specialty. Physicians also reported the percentage of their work week they were involved in direct patient care, the number of patients they had in the past month who were in recovery from alcohol abuse or dependence, and the percentage of patients in recovery who report sleep problems.

Statistical Analysis

Appropriate univariate statistics describe the study sample and their practices with respect to prescribing. A multivariable binary logistic regression model examined correlates of whether the physician offered medication to their sleep-disturbed, alcoholic patients in early recovery. Because first choice of treatment was a multinomial variable, multivariable polytomous logistic regression techniques modeled the probability of preferring antihistamines, trazodone, or another drug, compared to having no first choice of treatment.

RESULTS

Sample Characteristics

Of the respondents, 34% were psychiatrists, 21% family physicians, 18% internists, and 27 reported another specialty (Table 1). Mean ($\pm$ standard deviation) age was 52 ± 10 years, 17% of respondents were women, 85% were White, and 41% were ASAM-certified. Regionally, 26% came from the Northeast, 22% from the Midwest, 27% from the South, and 26% from the Western states. Respondents spent approximately $75\% \pm 27\%$ of their work-week in direct patient care. They had cared for a median of 30 [interquartile range, 12 to 600] patients in recovery from alcohol abuse or dependence in the past 3 months, of whom approximately $65\% \pm 28\%$ reported sleep problems in the first 3 months after detoxification.

When asked to consider their patients who report sleep problems in the first 3 months after detoxification from alcohol abuse or dependence, 64% of respondents reported that they have recommended medication to improve their patient's sleep (Table 1). However, only 22% offered medication to more than half of such patients. On average, respondents reported that they recommended medication to approximately $30 \pm 34\%$ of such patients. Among those who indicated that they have recommended medication, the mean percentage of patients for whom medications were recommended was $47\% \pm 33\%$.

Physician Practice

Of respondents, 33% indicated no first choice of treatment for sleep disturbance. Trazodone was the most commonly chosen medication, followed by other sedating antidepressants and antihistamines (Table 2). Among those who recommended trazodone, the mode initial dose was 50 milligrams (58% of respondents): 8.6% initiated therapy with 25 milligrams or less, 60.9% started with 26 to 50 mg, 13.3% with 51 to 75 mg, 25.3% with 76 to 100 mg, and 4.0% with more than 100 milligrams. Mean duration of therapy with trazodone was 48 ± 36 days, compared with 49 ± 65 days for other sedating antidepressants, 10 ± 15 days for antihistamines, 10 ± 9 days for nonbenzodiazepines and 8 ± 1 days benzodiazepines.

Any Recommendation of Medication

In a multivariable logistic regression model, family medicine physicians (OR, 0.41; 95% CI, 0.20 to 0.88; $P = .02$) were less likely than psychiatrists to offer medication to their sleep-disturbed, alcoholic patients in early recovery. In addition, there was a trend toward internal medicine physicians (OR, 0.48; 95% CI, 0.26 to 1.11; $P = .10$) and older respondents (OR per 10 years, 0.77; 95% CI, 0.56 to 1.05; $P = .10$) being less likely to offer sleep medication. The reported percentage of patients in recovery with sleep disturbance did not appear to influence prescribing behavior.

First Choice of Treatment

Compared to physicians who reported no first choice of sleep medication, female gender ($P = .07$) and younger age ($P = .10$) were non-significantly associated with antihistamines as first choice of treatment (Table 3). Physicians from the South ($P = .02$) were less likely indicate

antihistamines as their first choice, compared to those from the North. Psychiatrists were more likely to recommend trazodone than family medicine ($P = .02$) or internal medicine ($P = .04$) physicians. Younger age was associated with less likelihood of recommending antidepressants other than trazodone as first choice of treatment ($P = .09$).

DISCUSSION

In this national sample survey of addiction medicine physicians, although two-thirds of these physicians might offer pharmacological treatment on occasion, fewer than one-quarter offer medication to more than half of sleep-disturbed alcoholic patients in early recovery. Consistent with addiction medicine literature that recommends trazodone for sleep-disturbance in alcohol-dependent patients, low-dose trazodone was the most commonly prescribed sleep agent,^{13,16} and the mean duration of therapy exceeded one month. It is also one of the most commonly prescribed medications for sleep disturbance nationwide,¹⁷ though hypnotic efficacy data in the general population remains inadequate. Trazodone is well tolerated,^{18,19} is safe in combination with alcohol (except, perhaps, in massive overdose),^{20–26} has low abuse potential,^{27,28} is effective at bedtime dosing,^{29–31} and has analgesic effects similar to amitriptyline.^{32–34} Trazodone's analgesic effect may be important because of a recently observed association between alcohol dependence, disturbed sleep and pain.¹¹

The overall reluctance of these physicians to offer pharmacotherapy for sleep disturbance following detoxification is consistent with the traditional view that medications should be avoided in recovery. Seeking a solution for sleep problems through the use of medication might promote the alcohol-dependent patient's propensity to use substances to regulate discomfort or distress rather than seeking non-drug solutions.³⁵ Thus, the prescription of sleep medication in the context of recovery could delay correction of the alcoholic patient's disturbance in self-regulation³⁶ and increase the risk of subsequent relapse. In addition, in the absence of empirical evidence, sleep medications themselves might increase relapse. For example, some research has suggested that trazodone's metabolite m-chlorophenylpiperazine might increase craving.^{37–39}

On the other hand, these physicians' reluctance to treat sleep disturbance with medication may be counterproductive because poor sleep might trigger relapse in several ways.⁴⁰ First, the distress of sleep disturbance and fatigue itself might create a high-risk situation, especially among recovering persons who expect relief from insomnia through drinking again.^{8,41} Relatedly, poor sleep that accompanies both the acute and chronic abstinence syndromes may contribute directly to craving and the compulsion to resume drinking.³ In addition, disturbed sleep may also contribute to the development of negative affective states, such as depression, which are themselves important triggers of relapse.^{8,42–44} Sleep disturbance and the resultant fatigue might also compromise the recovering person's resolve and ability to cope with high-risk situations or negative affective states,¹² or to cope with a lapse. Finally, disturbed sleep may decrease daytime alertness, concentration and performance,⁴⁴ and thus render alcohol treatment, aftercare and mutual help groups less effective.

Few studies have examined whether treatment of sleep disturbance in early recovery will lower the likelihood of recurrent drinking.^{13,14} Trazodone has been used to manage sleep disturbance and anxiety among substance-abusing persons.⁴⁵ A recent abstract described the open-label use of trazodone to treat insomnia in 4 alcohol-dependent subjects in early recovery; all subjects reported significant improvement in subjective sleep quality.⁴⁶ Another uncontrolled trial of 25 alcohol dependent subjects from a detoxification program found that 48% of subjects who received trazodone were continually abstinent, and 20% relapsed to heavy drinking at 3-month follow-up.⁴⁷ The authors noted that these rates were similar to those reported for other anti-craving agents, such as naltrexone and acamprosate.⁴⁸ Although morning somnolence was a

common side-effect, these studies noted no untoward interactions with alcohol. Another small study further suggested that trazodone can alleviate symptoms of alcohol withdrawal.⁴⁹

Few other agents have been investigated. A recent report that described the use of gabapentin in 15 alcoholic outpatients found that a mean dose of 953 mg/day improved sleep disturbance, and all patients remained abstinent from alcohol at 4–6 weeks of follow-up.⁵⁰ None of the physicians here prescribed gabapentin. Not surprisingly, benzodiazepine and nonbenzodiazepines were infrequently offered for sleep disturbance in this population, and, when offered, the duration of treatment approximated only one week. Although sleep experts prefer nonbenzodiazepines for most insomnias, the risks and appropriate use of these potentially addictive sleep agents require further investigation in the recovering population.

In this study, psychiatrists were most likely to prescribe medication to sleep-disturbed patients in early recovery from alcoholism and most likely to prescribe trazodone, compared with family physicians and internists. This finding is not surprising given psychiatric research and experience using trazodone as a hypnotic for psychotropic-induced or other insomnias.^{22,23,51–53} Younger addiction medicine physicians were also more likely to prescribe medication and more likely to prescribe an antihistamine or trazodone than were older addictionists. This study cannot discern whether greater clinical experience leads older physicians to prescribe less often or whether older physicians are more likely to avoid pharmacotherapy for ideological reasons.

Although this survey highlights the need for controlled studies of the treatment of sleep disturbance among alcoholic patients, numerous related areas also require further research. These areas include further studies of the sleep disruption that occurs with alcohol withdrawal and its effects on relapse risk; investigations of the biological and genetic mechanisms of alcohol-related sleep disturbance and its polysomnographic correlates; research into the health consequences of sleep disorders among alcoholic patients, including risk factors for the development of obstructive sleep apnea; and natural history studies of insomnia as a predisposing factor for the development of alcohol abuse and alcoholism, especially among adolescents, women and the elderly.⁵⁴

This study's reliance on reported, not actual, practices is a key limitation. Its strengths include national representation of addiction medicine physicians and a response rate comparable to other physician surveys.⁵⁵ We conclude that many addiction medicine experts are reluctant to prescribe pharmacological treatment for sleep disturbance among patients in early recovery from alcoholism. When they do prescribe, trazodone, other sedating antidepressants and antihistamines are favored, despite limited evidence for or against this indication. The mean duration of therapy for trazodone and other sedating antidepressants exceeded one month. Conversely, benzodiazepine and nonbenzodiazepines are rarely prescribed to recovering alcoholic patients, and the mean duration of pharmacotherapy is very brief. Although the treatment of disordered sleep among alcoholic patients in early recovery has theoretical merit to prevent relapse, rigorous clinical trials of both pharmacologic and nonpharmacologic interventions are needed.

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TABLE 1
Respondent Characteristics (N = 311)

Gender, %	
Male	82.8
Female	17.2
Race/Ethnicity, %	
White	85.4
Asian	6.5
Other	8.1
Mean age (SD)	52.1 (9.7)
Specialty, %	
Psychiatry	34.5
Family medicine	20.5
Internal medicine	17.9
Other	27.1
Census Region, %	
Northeast	25.8
South	26.8
Midwest	21.6
West	25.8
Mean percentage of time in direct patient care (SD)	75.3 (27.4)
Mean number of patients in alcohol recovery in past month (SD)	46.4 (54.8)
Mean percentage of recovering patients who report sleep problems (SD)	64.5 (27.9)
Mean percentage of sleep-disturbed, recovering patients offered medication (SD)	30.3 (34.8)

TABLE 2
Prescription of Sleep Medication Among Respondents Who Ever Prescribe

	First choice therapy %	Ever prescribed in the last year %	Usual starting dose <i>Mean mg (SD)</i>	Duration of therapy <i>Mean days (SD)</i>
Antidepressant				
Trazodone	37.6	80.4	61.1 (28.1)	47.8 (36.4)
Amitriptyline	3.2	51.8	31.9 (17.9)	46.4 (37.0)
Doxepin	1.3	41.5	41.7 (34.7)	62.6 (113.2)
Mirtazipine	1.3	11.3	13.1 (3.8)	47.0 (47.2)
Nefazodone	.96	36.0	31.1 (43.6)	24.8 (66.7)
Imipramine	.64	18.0	41.0 (47.1)	59.1 (45.9)
Antihistamine				
<i>Over-the-counter</i>				
Diphenhydramine	9.6	33.8	19.8 (18.0)	14.2 (19.2)
Doxylamine	0	1.0	8.4 (3.9)	8.1 (.98)
<i>Prescription</i>				
Hydroxyzine	2.0	18.0	9.5 (14.0)	10.9 (24.9)
Promethazine	.32	2.9	8.4 (2.4)	8.1 (.89)
Nonbenzodiazepine				
Zolpidem	2.9	21.9	8.1 (1.1)	11.7 (18.2)
Zaleplon	.64	5.8	8.0 (.64)	8.7 (5.9)
No Specific Drug Mentioned	1.6	-	-	-
Benzodiazepine				
Temazepam	1.3	5.8	8.6 (3.1)	8.6 (4.5)
Flurazepam	.96	1.6	8.1 (1.7)	8.5 (6.3)
Clonazepam	.32	5.1	7.8 (1.2)	8.8 (6.7)
Lorazepam	0	3.2	7.9 (.99)	8.1 (.55)
Chlordiazepoxide	0	2.9	8.1 (1.7)	8.1 (1.2)
Diazepam	0	1.6	8.0 (1.1)	8.0 (.35)
Clorazepate	0	1.6	8.0 (.20)	8.0 (.32)
Oxazepam	0	1.3	8.2 (1.9)	8.0 (.19)
Estazolam	0	.96	8.0 (.38)	8.0 (.15)
Triazolam	0	.96	8.0 (.38)	8.0 (.15)
Quazepam	0	.96	8.0 (-)	8.0 (-)
Alprazolam	0	.64	8.0 (-)	8.0 (-)
Other medication				
Melatonin	1.9	30.2	111 (480)	38.5 (34.4)
Tryptophan	.96	9.6	522 (788)	25.4 (31.3)
Chloral hydrate	0	7.4	533 (269)	9.9 (9.1)

TABLE 3
Multivariable Correlates of First Choice of Treatment*

	<i>Odds Ratio (95% Confidence Interval)</i>			
	<u>Antihistamine</u>	<u>Trazodone</u>	<u>Other Antidepressant</u>	<u>Other</u>
Specialty				
Psychiatry	1.0	1.0	1.0	1.0
Family medicine	0.45 (0.11, 1.77)	0.35 (0.15, .83) [†]	2.92 (0.73–11.7)	0.62 (0.18–2.13)
Internal medicine	0.45 (0.12, 1.67)	0.39 (0.16–0.94) [†]	0.59 (0.90–3.85)	0.54 (0.14–2.11)
Other	1.20 (0.39, 3.68)	.64 (0.30–1.38)	1.22 (0.26–3.85)	0.58 (0.18–1.88)
Gender				
Male	1.0	1.0	1.0	1.0
Female	2.68 (0.90, 7.94) [‡]	1.16 (0.49–2.74)	1.60 (0.41–6.24)	0.47 (0.09–2.38)
Age, per 10 years	0.65 (0.39, 1.09) [‡]	0.77 (0.55, 1.09)	0.57 (0.30, 1.09) [‡]	1.41 (0.87, 2.27)
Census Region				
Northeast	1.0	1.0	1.0	1.0
South	0.13 (0.02, 0.68) [†]	0.79 (0.35–1.80)	1.62 (0.35–7.43)	0.59 (0.17–2.02)
Midwest	0.70 (0.21, 2.35)	0.85 (0.35–2.10)	0.73 (0.13–4.19)	0.86 (0.23–3.23)
West	0.52 (0.17, 1.66)	0.63 (0.27–1.49)	1.08 (0.21–5.46)	0.58 (0.16–2.04)
Percentage of time in direct patient care, per 10%	0.89 (0.76, 1.04)	0.95 (0.68, 1.06)	1.07 (0.86, 1.32)	0.98 (0.83, 1.08)
Number of patients in alcohol recovery in past month, per 10 patients	1.01 (0.93, 1.09)	1.01 (0.96, 1.07)	0.97 (0.86, 1.11)	1.01 (0.93, 1.08))
Percentage of recovering patients who report sleep problems, per 10%	0.90 (0.76, 1.04)	0.94 (0.85, 1.04)	0.99 (0.83, 1.21)	1.09 (0.92, 1.28)

* From a multinomial logistic regression model. No first choice of treatment is referent group.

[†] P < .05

[‡] P < .10