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ARTICLE

Naltrexone Pharmacotherapy for Opioid Dependent Federal Probationers

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Abstract—*Federal probationers or parolees with a history of opioid addiction were referred by themselves or their probation/parole officer for a naltrexone treatment study. Participation was voluntary and subjects could drop out of the study at any time without adverse consequences. Following orientation and informed consent, 51 volunteers were randomly assigned in a 2:1 ratio to a 6-month program of probation plus naltrexone and brief drug counseling, or probation plus counseling alone. Naltrexone subjects received medication and counseling twice a week; controls received counseling at similar intervals. All therapy and medication were administered in an office located adjacent to the federal probation department.*

Fifty-two percent of subjects in the naltrexone group continued for 6 months and 33% remained in the control group. Opioid use was significantly lower in the naltrexone group. The overall mean percent of opioid positive urine tests among the naltrexone subjects was 8%, versus 30% for control subjects ($p < .05$). Fifty-six percent of the controls and 26% of the naltrexone group ($p < .05$) had their probation status revoked within the 6-month study period and returned to prison. Treatment with naltrexone and brief drug counseling can be integrated into the Federal Probation/Parole system with favorable results on both opioid use and re-arrest rates. © *1997 Elsevier Science Inc.*

Keywords—naltrexone; opioid dependence; parole; probation; substance dependence.

INTRODUCTION

NALTREXONE HYDROCHLORIDE IS an orally administered opioid antagonist that has been used in the treatment of opioid addiction for the past 20 years (Lewis, 1975; Martin, 1975; Martin, Jasinski, & Mansky, 1973; O'Brien, Greenstein, Mintz, & Woody, 1975). It has been shown to be safe and well tolerated with few side effects (Brahen et al., 1978; Judson, Carney, & Goldstein, 1981; Lewis, Mayer, Hersch, & Black, 1978; Schecter, Friedman, & Grossman, 1974). In a typical treatment regimen, patients receive 100 to 150 mg two or three times per week as part of a program of drug counseling and related services, though dosing with 50 mg/day is also an option. Once the patient has been detoxified from opioids and stabilized on naltrexone, opioid use at usual doses has little or no effect. Naltrexone patients soon learn that consumption of even large quantities of opioids is pointless

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and opioid-seeking behavior stops as long as naltrexone is taken as prescribed.

Naltrexone has been extensively evaluated in several clinical trials and results are uniformly positive for patients who remain in treatment. In addition to having essentially no opioid use, patients typically show significant reductions in nonopioid drug use, improvement in employment status and earnings, and reductions in the social and legal problems that are associated with addiction (Greenstein, Arndt, McLellan, O'Brien, & Evans, 1984; Judson et al., 1981; Lewis et al., 1978; O'Brien et al., 1975; Shufman et al., 1994).

Despite these positive results, naltrexone has not been well accepted by people with opioid addiction. Only a small proportion of patients seeking treatment have been willing to try naltrexone and a large proportion of those who begin treatment quickly drop out (Greenstein, Evans, & McLellan, 1983; Hollister, 1978; Judson & Goldstein, 1984; Kleber & Kosten, 1984; O'Brien et al., 1975). Several factors appear to contribute to this lack of acceptability by the target population. First, to begin naltrexone treatment the individual must cease all opioid use and remain opioid-free for 5 to 7 days. Many opioid-addicted individuals are unable to successfully detoxify and control their use for that period of time. Secondly, for those who successfully detoxify and begin naltrexone, the desire to continue treatment often subsides and the patient drops out. Third, unlike methadone, naltrexone has no opioid agonist effects and produces no physiological dependence. Thus, naltrexone produces no positive mood state, and patients can "walk away" from it at any time without experiencing withdrawal symptoms.

In spite of these factors, which have limited its utility, some opioid-addicted patients have done very well on naltrexone. Among this group are a significant number of "white-collar" patients, such as physicians, nurses, lawyers, stock brokers, and businessmen (Gonzalez & Brogden, 1988; Ling & Wesson, 1984; O'Brien, Woody, & McLellan, 1986; Tennant, Rawson, Cohen & Mann, 1984). While the favorable outcome among these patients may be due to their social supports, it is also likely that the contingencies under which most were treated contributed to that success. Specifically, these "white-collar" patients were often referred to treatment by employers, medical boards, or other agencies, and their continued employment was usually contingent upon successful treatment. In this regard, the "white-collar" patients may be similar to that subgroup of opioid-addicted individuals who are on probation or parole as a result of drug-related crimes. In both groups, the negative consequences that may result from continued use can be immediate and severe. For probationers and parolees, failure to remain drug-free may result in re-arrest, revocation of probation, and incarceration. This threat of a forceful, negative, and immediate consequence may increase the likelihood and duration of successful involvement in a treatment program.

Based on this view, Brahen, Henderson, Capone, and Kordal (1984) organized a work-release program with naltrexone on Long Island in 1974. In this program, formerly addicted inmates with drug-related crimes are given the opportunity to participate in a work-release program, provided they participated in naltrexone therapy. Most patients selected as eligible agreed to participate and through 1984, 691 inmates were started on naltrexone to help their transition from prison to employment. Though no controls were used, both prison officials and clients considered the program to be successful.

Legal pressure similar to that of work-release participants is found in formerly addicted persons who have been convicted of drug-related crimes and who are on probation or parole. They are in danger of relapse due to their increased opportunity to obtain heroin while living outside of prison. Combining addiction treatment with probation or parole might reduce the high re-arrest rates that are common among these individuals when they relapse to opioid use.

In this paper, we report a controlled study of a naltrexone treatment program for federal probationers with a history of opioid addiction. This study was designed to determine the feasibility and effectiveness of naltrexone pharmacotherapy for this population, specifically the ability of naltrexone therapy to reduce opioid use and re-arrest.

SUBJECTS AND METHODS

Subjects

Subjects were individuals who had been assigned to a minimum of 2 years federal probation or parole and were being supervised by probation officers of the Substance Abuse Program of the United States Federal Probation Office in Philadelphia. This program has a large caseload, including approximately 300 individuals with histories of opioid addiction (mostly heroin) at any one time. Probation/parole officers working in this program have received training on the pharmacological effects of abused substances and have expressed an interest in working with this population.

Consent and Subject Protection Procedures

This study was reviewed and approved by the human subjects committee of the University of Pennsylvania, and by an administrative board consisting of the Chief Federal District Court judge and other District Court judges in Philadelphia. Subjects who participated gave informed consent after the study procedures and possible side effects of naltrexone were fully explained. Special efforts were required to assure the voluntary nature of participation. Both research staff and the probation officers understood that this program was an additional service that might be helpful, but that no adverse conse-

DISCUSSION

The data reported here provide evidence of the feasibility of integrating treatment for substance use disorders within the Federal Probation system, and the utility of naltrexone in reducing opioid use and re-arrest rates among persons with a history of opioid dependence. As hypothesized, these individuals appear to be more highly motivated to comply with naltrexone treatment than those who are without similar legal pressure.

These data are consistent with earlier reports indicating that combining legal or administrative pressure with treatment can have a greater effect than either intervention used alone. The probation/parole officers were generally accepting of the program, and appeared to perceive it as something that would give them a better chance at success with a group of persons who are at high risk for relapse, and who have high rates of re-arrest. In fact, the data indicate that the program was highly successful in this regard, since re-arrest rates among naltrexone completers were only half the rate of controls.

Despite the threat of re-arrest, cocaine use among both groups was high. This finding, along with the use of other drugs, speaks to the limitations of the threat of re-arrest and of naltrexone to modify the course of nonopioid dependence in a significant number of persons. Perhaps outcome would have been better, especially for those abusing cocaine, had more psychosocial treatment been provided. The drug counseling involved only brief checks of progress, encouragement to discontinue drug use, and help with immediate psychosocial problems. Counseling was less frequent, intensive, and focused than that found in treatment programs such as those described by several investigators (Alterman et al., 1994; Carroll, Power, Bryant & Rounsaville, 1993; Rawson, Obert, McCann, & Ling, 1991; Washton, Gold, & Pottash, 1984) as being associated with significant gains in persons with heroin or cocaine dependence.

The possibility of a volunteer bias cannot be ruled out. Members of both the control and the experimental group had to be willing to participate and thus may differ in an important way from those probationers who were not interested in participation. However, two issues must be considered in interpreting the impact of this potential bias. First, the impact would be seen in both groups and thus would not moderate the differences observed between the groups. Second, and perhaps more important, the use of naltrexone will always occur among individuals who are willing to take the medication. We believe that the data presented in this paper is quite representative of that group of probationers at risk of return to opiate dependence.

Though retention on naltrexone was much greater than in comparable populations who are under less legal pressure, drop-out was still significant. Better compliance might results from the use of depot naltrexone, which is currently under development and might be ready for clinical use within several years. Such a long-acting form of naltrexone would greatly increase the duration of the opioid-receptor blocking effects and thus decrease the chances for relapse. It would reduce the need for bi-weekly medication appointments and might provide more time for the patient to think about the consequences of dropping out of treatment before relapse occurs, and for psychosocial treatment to have a greater impact since the addiction-free intervals would be extended.

These data suggest that the results of past evaluations of naltrexone treatment with *clinical* samples may actually underestimate the effects of naltrexone in *court-connected* populations. These federal probationers and parolees with opioid problems and opioid-related offenses may be an excellent group for naltrexone treatment because it is a proven deterrent to opioid use. Although naltrexone treatment would have to be voluntary, as it was in this study, the incentives for compliance among these federal probationers are clear and compelling, such as the *fear of incarceration* upon re-addiction, the genuine desire to recover from opioid dependence and its associated problems, including the risk of human immunodeficiency virus (HIV) infection. Further, the implementation of naltrexone treatment should be inexpensive and quite feasible within the probation system. Finally, given the safety and low incidence of side effects with naltrexone, this intervention, along with other treatment approaches, shows promise for reducing the high relapse and re-arrest rates that are common among persons convicted of drug-related crimes.

REFERENCES

Alterman, A.I., McLellan, A.T., O'Brien, C.P., August, D.S., Snider, E.C., Cornish, J.W., Droba, M., Hall, C.P., Raphaelson, A., & Schrade, F. (1994). Effectiveness and costs of inpatient versus day hospital cocaine rehabilitation. *Journal of Nervous and Mental Disorders*, 182, 157–163.

Brahen, L.S., Capone, T., Heller, R.C., Linden, S.L., Landy, H.J., & Lewis, M.J. (1978). Controlled clinical study of naltrexone side effects comparing first-day doses and maintenance regimens. *American Journal of Drug and Alcohol Abuse*, 5, 235–245.

Brahen, L.S., Henderson, R.K., Capone, T., & Kordal, N. (1984). Naltrexone treatment in a jail work-release program. *Journal of Clinical Psychiatry*, 45, 49–52.

Carroll, K.M., Power, M.E., Bryant, K., & Rounsaville, B.J. (1993). One-year follow-up status of treatment-seeking cocaine abusers. Psychopathology and dependence severity as predictors of outcome [see comments]. *Journal of Nervous and Mental Disorders*, 181(2), 71–79.

Gonzalez, J.P., & Brogden, R.N. (1988). Naltrexone. A review of its pharmacodynamic and pharmacokinetic properties and therapeutic efficacy in the management of opioid dependence. *Drugs*, 35, 192–213.

Greenstein, R.A., Arndt, I.C., McLellan, A.T., O'Brien, C.P., & Evans, B. (1984). Naltrexone: A clinical perspective. *Journal of Clinical Psychiatry*, 45(9 Pt 2), 25–28.

Greenstein, R.A., Evans, B.D., & McLellan, A.T. (1983). Predictors of favorable outcome following naltrexone treatment. *Drug and Alcohol Dependence*, 12, 173–180.