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Slow tapering from methadone maintenance in a program encouraging indefinite maintenance

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Abstract

Longitudinal studies have indicated that most opioid agonist-using patients are not able to successfully complete tapering attempts. Little is known, however, about tapering within a treatment environment that is supportive of indefinite agonist treatment and medication tapering. In this study, all records of patients beginning a slow methadone taper were reviewed ($N = 30$). No patient successfully completed methadone tapering. Four patients (13.3%) successfully switched to buprenorphine/naloxone, one of whom tapered off buprenorphine/naloxone. Three patients (10%) were continuing their taper at the study's end. One patient transferred to another program, one was administratively discharged, and one had his taper stopped for mishandling doses. The remaining patients (n = 20, 66.7%) stopped their tapers for the following reasons: feeling unstable/withdrawal symptoms (n = 4, 13.3%), drug use/positive urinalysis results (n = 12, 40%), psychiatric instability (n = 3, 10%), and pain management (n = 1, 3.3%). Only one patient prematurely left treatment secondary to a failed taper attempt. Patients attempting tapers should be informed about the difficulty involved and be monitored closely for signs of instability. For a few patients, a taper to a lower methadone dose and a switch to buprenorphine/naloxone are obtainable. Program policies that support both tapering attempts and indefinite maintenance are described in this article. © 2006 Elsevier Inc. All rights reserved.

Keywords: Methadone; Buprenorphine; Medication tapering

1. Introduction

Opioid agonist treatment has become the treatment of choice for chronically opioid-dependent individuals. Since its inception, there has been some controversy as to whether agonist treatment should be provided indefinitely or whether patients should be encouraged to taper off agonist medications after a period of stabilization. Moolchan and Hoffman (1994) described a framework for phases of agonist treatment that include an initial stabilization phase followed by commitment and rehabilitation phases. Once a patient has achieved most of the rehabilitation phase goals, treatment can proceed with indefinite medical maintenance or a medication tapering phase.

Longitudinal studies conducted mostly in the 1970s and early 1980s showed that most patients were not able to complete tapering successfully and that most of those who were relapsed to opiate use within 1 year (for more detailed discussions, refer to the work of Latowsky, 1996; Magura & Rosenblum, 2001; and Milby, 1988). In these studies, the variables most often associated with successful tapering were the following: length of time in opioid agonist treatment, continued abstinence from illicit drug use,

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vocational/financial stability, social stability (socialization with non-drug users), strong motivation to detoxify, and lack of "detoxification phobia." Latowsky (1996) and Wermuth, Brummett, and Sorensen (1987) reported that negative affective states are often associated with the tapering process and should be a focus of clinicians assisting patients during tapering attempts. Sorensen, Trier, Brummett, Gold, and Dumontet (1992) developed the Tapering Network Support Program to assist patients motivated to taper off methadone maintenance (MM) with additional treatment program resources. However, patients provided with additional support were not more likely to taper off than those not provided with additional support. Of the patients offered additional support, only 41.4% actually used any of the additional support services. A shortcoming of this study necessitated by the research design and noted by the authors was a time constraint for initiating and taking methadone dose decreases. Patients enrolled in the study were terminated from it if they did not begin their taper within 3 months of study enrollment or if they did not take a dose decrease for 2 consecutive months once the taper began.

These early studies are cited as evidence that most methadone-using patients should remain in maintenance treatment indefinitely. The *State Methadone Treatment Guidelines* (Payte & Khuri, 1993), published as a treatment improvement protocol by the Center for Substance Abuse Treatment, recommends an indefinite period of methadone treatment and that "withdrawal [from methadone] should be attempted only when strongly desired by the rehabilitated patient." Payte and Khuri further recommended a slow rate of tapering in such cases of "less than 10% of established tolerance or maintenance dose, and there be 10–14 day intervals between dose reductions." A seminal study by Senay, Dorus, Goldberg, and Thornton (1977) found that patients on a methadone taper of 3% of the initial dose per week were more likely to complete their tapers than those on a taper of 10% per week.

In Sweden, MM has been provided on a relatively small scale and eventual detoxification is the stated goal by the National Board of Health and Welfare (Eklund, Melin, Hiltunen, & Borg, 1994). Despite this stated goal, Eklund et al. (1994) reported that only 59 of the approximately 600 patients provided with MM before 1991 had made a serious attempt at tapering. Of these patients, only 25 (19 on the first attempt and 6 on subsequent attempts) were eventually successful at achieving and maintaining a drug-free state. In a subsequent report, Eklund, Hiltunen, Melin, and Borg (1995) identified the following variables as related to successful tapering from MM based on the literature: social stability, employment, stable family and social life outside the drug world, long participation in MM, staff support for and belief that the tapering will be successful, and slow withdrawal schedule.

It is also possible that the advent of buprenorphine could improve success at tapering by providing a bridge between methadone and treatment without medication. Buprenorphine has been considered easier to taper off compared with other opioids (Jones, 2004). As a partial agonist, buprenorphine does not activate the μ-opioid receptor to the same degree as a full agonist does and is not expected to create the same degree of tolerance or neuroadaptation as a full agonist such as methadone does (Johnson & McCagh, 2000). Buprenorphine also has a high affinity for the μ-opioid receptor, thus blocking other exogenous opioids that patients might be tempted to use to alleviate withdrawal symptoms. Buprenorphine has slow dissociation from the μ-opioid receptor, which may soften withdrawal symptoms because of the slow detachment from the receptor. In addition, buprenorphine activates the κ-opioid receptor, producing mild feelings of positive mood and well-being to compensate for the withdrawal symptoms associated from less activation at the μ-opioid receptor. Breen et al. (2003) successfully transferred 50 of 51 patients to buprenorphine at a methadone dose of 30 mg or lower. Of these patients, 38 (76%) successfully completed the taper from buprenorphine.

Outside the early literature and the Swedish studies cited, not much is published about how many patients attempt tapering efforts within a treatment environment that is supportive of both indefinite agonist treatment and medication tapering in rehabilitated patients who desire so. This investigation provides descriptive information about patients who attempt medication tapering in such a situation. The clinic in which the investigation occurred also had buprenorphine available during the latter part of the study.

2. Materials and methods

2.1. Participants

All records of patients being treated with opioid agonist therapy at the Department of Veterans Affairs of the Puget Sound Health Care System (VA PSHCS; Seattle, WA, USA) between 1997 and 2002 (N = 216) were reviewed to determine if the patients met the following criteria for a more thorough record review: (1) being in opioid agonist treatment for at least 6 months and (2) having started a slow taper approved by the treatment team (a *slow taper* is defined as one that would last a minimum of 120 days if completed as scheduled). A total of 30 patients (28 men and 2 women; 13.9%) met the inclusion criteria. Their mean age at the time of taper initiation was 50.2 years (SD = 7.2 years). The sample had a racial mix of Whites (80%), African Americans (13.3%), and Hispanics (6.7%). Their mean number of months in treatment before initiating the dose taper was 41.4 months (SD = 29.8 months).

2.2. Setting

The research was conducted at the VA PSHCS. The research protocol was approved by the University of

Washington's Human Subjects Committee and by the VA PSHCS Research and Development Committee. The VA PSHCS's opioid agonist program is one of four treatment teams within the Addiction Treatment Center providing substance abuse treatment services to veterans. The patient–counselor ratio is currently 50:1. The treatment philosophy of the VA PSHCS is that drug abuse is a multidetermined problem and needs a multifaceted treatment approach. The phases of treatment approach (with less group therapy) proposed by Moolchan and Hoffman (1994) closely approximate the clinic's philosophy. Urine toxicology screening is conducted weekly. Screening is reduced to twice monthly with 6 months of consecutive negative urinalysis results and to monthly with 1 year of consecutive negative test results. Specimens are tested for opiates, cocaine, benzodiazepines, amphetamines, and barbiturates by enzyme immunoassay, with positive results confirmed by another methodology. The methadone dosing policy is a flexible approach in which the clinic physician, the patient, and the treatment team work together to find an optimal dose for the patient. Patients are not encouraged to taper off maintenance therapy but are supported in their attempts to taper off if they have achieved most of their rehabilitation goals. For the treatment team to approve a slow taper, a patient must have the following: stable housing, no evidence of recent drug use, and progress toward treatment goals. All patients on approved slow tapers may stop the taper at any time and increase their dose to the dose before the last dose decrease by simply notifying the clinic pharmacy of their wishes. Taper attempts are stopped by the treatment team with any evidence of illicit drug use. Most approved tapers have a planned "hold." These holds are target dose levels that when reached will require the taper to be put on hold. A patient must rerequest to the treatment team to restart the taper. These built-in holds force the patient to discuss with the counselor progress on the taper and to recommit to a tapering plan. Patients who request a taper that is not approved by the treatment are encouraged to meet some minimal requirements such as providing 30 days of negative urinalysis results before starting a taper. In cases where a patient demands a taper not approved by the treatment team, a 21- to 30-day "against medical advice" (AMA) taper is provided. In such cases, the taper is usually stopped if requested by the patient and a stable dose of methadone is reestablished. The possibility of switching from methadone to buprenorphine/naloxone was available for the patients who reduced their methadone dose to 30 mg or lower and who voiced a preference to be switched to buprenorphine/naloxone to complete their taper. Patients who switched to buprenorphine/naloxone followed the same clinic rules as did patients on methadone for the first 30 days on buprenorphine/naloxone. Once a patient is stable on buprenorphine/naloxone for 30 days, the physician changes the patient status to an "office-based" one in which the patient comes to the medical center once a month to pick up medication from the medical center outpatient pharmacy rather than from the narcotic treatment program pharmacy. Frequency of counseling and urine screening is individually negotiated with the counselor (usually monthly initially and then often reduced to quarterly).

2.3. Procedures

The medical records of all individuals who met the inclusion criteria between January 1, 1997, and December 31, 2002, were reviewed and the following data were extracted: age at initiation of taper, race, sex, time in treatment before initiation of taper attempt, dose level at initiation of taper, the scheduled rate of the taper, actual rate of taper, number of taper holds, time until taper stopped, if taper completed, total length of taper period, reason for taper holds, reason for taper discontinuance, and urinalysis results for 1 year before starting taper as well as those during the taper process.

3. Results

The mean taper starting dose was 89.7 mg of methadone (range = 45–155 mg). The mean percentage decrease in dose was 43.2% (range = 10%–100%). The mean number of months in dose taper status was 10.9 (range = 2–41 months). Based on the number of positive urinalysis results, drug use in the 6 months before initiating the taper was infrequent, ranging from a mean of 0.10 positive specimens (SD = 0.40) for benzodiazepines to a mean of 1.03 positive specimens (SD = 1.94) for opiates in that time frame. Most of the patients were providing urine specimens once a week in the months preceding the start of their tapers.

No patient successfully completed a methadone taper during the study period, although one patient completed an AMA detoxification after his approved taper was stopped by the treatment team owing to recent drug use. This patient relapsed to active opiate use and was readmitted within 1 year. One patient transferred to another program, one was administratively discharged for fighting, and one had his taper stopped for mishandling take-home doses. Three patients (10%) were continuing on their taper at the study's end. Four patients (13.3%) successfully switched to buprenorphine/naloxone, which had become an interim goal. One of these said patients tapered off buprenorphine/naloxone. None of the other patients had attempted switching to buprenorphine/naloxone by the end of the study. The remaining patients (n = 20, 66.7%) stopped their tapers for the following reasons: feeling unstable/withdrawal symptoms (n = 4, 13.3%), drug use/positive urinalysis results (n = 12, 40%), psychiatric instability (n = 3, 10%), and pain management (n = 1, 3.3%). Six months after stopping their tapers, 13 (65%) of these 20 patients remained on a stable methadone dose lower than their taper starting dose. Thus, only one patient left treatment rather than have his taper stopped by the treatment team.

Table 1
Clinic procedures dually supporting methadone tapering attempts and remaining on maintenance

Before starting tapering attempt
1. No evidence of recent drug use by patient
2. Patient has stable housing
3. Patient has stable finances
4. Patient has been making progress toward treatment plan goals
5. A go-slow plan is developed jointly by the patient and the counselor. The plan usually has dose decreases of 5% a month or less. Treatment team must approve plan.
Once tapering starts
1. Patient able to stop taper and go up on dose to the level before the last dose decrease by simply informing pharmacy/dispensary of the request; client is encouraged to discuss reasons for stopping taper with counselor before restarting taper
2. If further dose increases are desired, they are provided quickly after brief medical provider review; review often done by phone and in consultation with patient's counselor
3. Client can delay planned dose decreases by simply informing pharmacy/dispensary of the request; restarting taper can be done by simply informing pharmacy/dispensary of the request if done within 60 days of last decrease; restarts after 60 days of no decrease require team approval
4. Taper plan has one to three built-in holds; holds are target dose levels that when reached will require the taper to be put on hold; to restart taper, the patient needs to make a request to the treatment team that the taper be restarted after discussing taper progress with counselor
5. Taper is stopped after any evidence of drug or alcohol use; drug and alcohol use monitoring is usually increased; counseling may be increased; patient may not request to restart taper until there has been a minimum of 30 days of no evidence of drug or alcohol use

Patients who reduced their taper starting dose by more than 50% before discontinuing the taper (n = 12) were compared with those whose dose had been decreased by less than 50% before they stopped their taper (n = 18) on the following variables: age, months in treatment, number of positive urinalysis results in 6 months before initiating taper, taper starting dose, and number of months in taper status. The two groups did not differ on any of these variables; thus, we were unable to identify any variable commonly available to treatment providers that indicated which patients would make considerable progress on a taper and which would not.

The methadone dose at which four patients successfully switched from methadone to buprenorphine/naloxone ranged from 24 to 17 mg. Their methadone tapering starting doses ranged from 90 to 45 mg. The stable dose of buprenorphine/naloxone achieved after switching from methadone ranged from 12/3 to 6/1.5 mg. The lowest methadone dose reached in their previous methadone tapering attempts ranged from 24 to 4 mg. Their time in continuous MM treatment ranged from 6.5 to 189 months. All three patients still on buprenorphine had a goal of tapering off buprenorphine/naloxone. One had reduced his buprenorphine dose from 12/3 mg/day when inducted to 4/1 mg/day over a 10-month period and was still in the process of tapering at the study's end. This patient had made several unsuccessful methadone tapers in the past 10 years, with the lowest methadone dose obtained being 15 mg. The other two had been holding at their stable buprenorphine/naloxone induction dose or slightly lower for at least 9 months at the study's end. Both appeared to be experiencing less internal pressure "to get off" agonist therapy, some of which is due to the less restrictive nature of being in an office-based status as compared with being in the standard MM program.

4. Discussion

Consistent with the literature cited in the Introduction, the patients studied here had great difficulty successfully tapering off methadone. Despite the limited evidence of drug use in the 6 months before initiating their tapers, 40% of the sample stopped their tapers because of a return to drug use. Consistent with reports by Latowsky (1996) and Wermuth et al. (1987), negative states such as psychiatric symptoms, feeling unstable, and withdrawal symptoms contributed to patients stopping their tapers. In this retrospective medical record review, it is unclear how many of those who relapsed to illicit drug use were suffering from one or more of these negative states.

Findings from this study support the recommendation that most MM patients should remain on maintenance therapy indefinitely. Treatment providers are faced with a difficult dilemma when stable patients request a taper of opioid agonist medications. On one hand, a provider will want to support a patient's therapy goals, especially when the patient has been making good progress in treatment. However, decades of research and clinical experience indicate that most taper attempts will fail and that often a patient's status will worsen (e.g., drug use relapse and increased psychic distress). In this study, only one patient left treatment in the face of a failing taper. In all other cases, the staff were able to keep the taper-failing patients in treatment and to restabilize them in the program. Although not examined directly in this study, we feel that the program philosophy and rules regarding tapering force patients to go slow, discuss problems, stop when there is evidence of destabilizing, and view stopping a taper as successful decision making rather than a failure experience. Listed in Table 1 are some of the clinic procedures used to support both tapering and maintenance with the understanding that continued maintenance will be the preferred outcome for most patients.

The successful tapering of methadone to a lower dose and subsequent induction onto buprenorphine have only recently been a focus of a few investigations looking into methadone tapers. Breen et al. (2003) were successful in transferring 50 of 51 stable methadone-using patients to buprenorphine when their methadone doses were 30 mg or lower. Of these patients, 76% successfully tapered off buprenorphine. However, only 31% remained heroin free during the first month after completing the taper. In the Breen et al. study, the buprenorphine taper had to be

completed within 16 weeks of buprenorphine induction. It is unclear at this time if these patients might have been more successful at both completing their tapers and subsequently remaining opiate free if they had a longer, more open-ended time frame for completing the taper.

Limitations of this study include its retrospective design and reliance on progress notes from medical records, its somewhat small sample, and its restriction to a single opioid treatment program. Due to the retrospective design, the precise reasons why 30 patients attempted a taper while 186 did not remain elusive.

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