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JAMA. 2008;300(3):314-321 (doi:10.1001/jama.300.1.jrr80005)

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A 50-Year-Old Woman Addicted to Heroin

Review of Treatment of Heroin Addiction

Charles P. O'Brien, MD, PhD, Discussant

DR SHIP: Ms W is a 50-year-old woman being treated with methadone maintenance. She lives in Boston and has Medicare.

Ms W began using heroin at age 14 years. She used intravenous heroin but has subsequently sniffed it as well. Friends of hers used the drug and she decided to try it. Initially she did not like it, but she returned to it for reasons she cannot understand and became addicted. She supported her habit with stealing, armed robbery, and prostitution. She has been in detoxification "more than 20 times" and had repeated difficulties remaining free from heroin use. She finds that at times of stress it is very difficult to refrain from using heroin, and she relapses.

Ms W currently receives maintenance methadone, 108 mg/d. She gets her methadone once a week and sees a counselor as well. She has tried to reduce her methadone dose several times unsuccessfully. Each time, she found herself returning to heroin use. She is tired of taking methadone and would like to try buprenorphine. She hopes that this would prevent her from getting the desperate feeling she has occasionally for heroin and allow her eventually to be drug free.

Ms W has 2 living children and 5 grandchildren. She lost 1 teenaged daughter to a gunshot wound. Ms W completed 10th grade and acquired her GED (General Education Development) certificate. She has worked in a variety of jobs but is currently unemployed. She'd like to return to school and be a role model for her children and grandchildren.

In the past, in addition to heroin she has used crack cocaine, a variety of pills, acid, and marijuana. She does not drink. She smoked cigarettes, about 2 packs per day until 7 years ago, when she quit. Over the years, Ms W tried to quit smoking multiple times using nicotine patches, which she found effective. She was able to quit completely with the aid of bupropion.

Her medical history is notable for hypertension and hepatitis C virus, which has been successfully treated so that her viral load is undetectable. She has undergone a total hysterectomy, bilateral knee surgery, and a cholecystectomy.



CME available online at www.jamaarchivescme.com and questions on p 341.

Heroin addiction is a complicated medical and psychiatric issue, with well-established as well as newer modes of treatment. The case of Ms W, a 50-year-old woman with a long history of opiate addiction who has been treated successfully with methadone for 9 years and who now would like to consider newer alternatives, illustrates the complex issues of heroin addiction. The treatment of heroin addiction as a chronic disease is reviewed, including social, medical, and cultural issues and pharmacologic treatment with methadone and the more experimental medication options of buprenorphine and naltrexone.

JAMA. 2008;300(3):314-321

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Her daily medications include lisinopril, 10 mg; aldactone, 25 mg; verapamil, 240 mg; methadone, 108 mg; and a multivitamin. She has no drug allergies.

MS W: HER VIEW

My first experience was at age 14. Some friends of mine were doing it in a corner, and I said, "Gee, what is that?" So I did it, and that was intravenously. I didn't like it really at first, and it was a few years later that I tried it again, not really understanding why I was doing this, other than starting to remember things that had happened to me in my lifetime, being a survivor of incest and having a mother who didn't support me.

I'd use it each and every day. I would have to have some to wake up to in the morning. I remember being in the streets and not being able to keep my head up. I remember ugly

This conference took place at the Psychiatry Grand Rounds at Beth Israel Deaconess Medical Center, Boston, Massachusetts, on May 10, 2005.

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Clinical Crossroads at Beth Israel Deaconess Medical Center is produced and edited by Tom Delbanco, MD, Howard Libman, MD, Eileen E. Reynolds, MD, Amy N. Ship, MD, and Anjala V. Tess, MD. Risa B. Burns, MD, is series editor.

Clinical Crossroads Section Editor: Margaret A. Winker, MD, Deputy Editor.

stuff, uncontrollable stuff. When they talk about the insanity of the drug, it's true—it's really insane.

I only had 5 years' sobriety time—5 years at one time. That's how bad it was. I've gone into several detoxes, but it seems like I would detox off of the drugs, and as soon as the detox was over, I would pick up again because—you have to understand the detox is very, very hard. It puts your body through all kinds of changes and makes you nervous—after you don't have it anymore, you want it so bad that you'll beg, steal, borrow, or do whatever you can do to get it. My drug use has led me down roads that I never dreamed of.

One thing I realized about methadone: you start off on 40, 50 [mg], whatever, and then it levels off, and then when something happens in your life that's traumatic, you're like, "Oh, I want to use, I don't want to deal with this," so instead of using, I would up my dose, you know. So, what am I going to do, go up to 200? It's got to stop. They say I'm not clean because I'm on the program. I don't care what they say, I'm still clean. I'm able to lead a normal life. I'm not out there doing the things that I was doing. But now I'm at the point where I don't want the methadone anymore. It's doing something to my body, and it's doing something to my mind. I just want to be free from all that, just be normal, whatever normal is.

I have a family—I want to see my grandchildren grow up, and I want to see what happens in their lives, and my daughter and my son. They've been through a lot with me, and I used to try to make it up to them by buying them things until I realized that wasn't going to do it. I just had to stop doing what I was doing and try to be a power of example to them. I could buy them thousands of dollars' worth of stuff, but what does that mean? They want to see their mom clean and healthy. So, this time here it's very important for me to try this new medication, and I feel it's going to work. I want to do this. I'm 50 years old. I don't want to be a 50-year-old woman out there ripping and running and looking for drugs and doing all kinds of things to get them.

My goal is to become drug free, maybe go back to school. I want to learn about computers. And I'd just like to try to become a productive member of society. I would like to know why it has taken so long for doctors and that type of community to want to help drug addicts, because this is an epidemic, and the kids are getting younger. There are new and improved drugs out there now—I don't know if it's because people aren't talking about it, you know, people aren't asking for help. Well, let me ask for help for all of those who are using drugs, because people are dying.

AT THE CROSSROADS: QUESTIONS FOR DR O'BRIEN

What is the epidemiology of heroin addiction? What are the clinical features of addiction? What are the pros and cons of treatment with methadone? What are the other options?

What is the appropriate duration and setting for successful detoxification? How does one choose? What does the future hold? What do you recommend for Ms W?

DR O'BRIEN: Ms W represents some typical and some atypical aspects of opiate addiction. Women represent between 20% and 35% of patients in most opiate treatment programs, and heroin is the most common primary drug for women in methadone treatment,¹ although prescription opioid abuse has been increasing.² Ms W has hepatitis C, but she escaped other infections common in individuals using heroin intravenously, such as human immunodeficiency virus (HIV) infection and subacute bacterial endocarditis. Drugs that are taken by smoking, such as crack cocaine or nicotine, have a male-female ratio that is closer to 50-50.¹ Prescription opioid abuse, which can involve oral administration as well as crushing and dissolving for injection, may also include an equal proportion of women, but comparative studies have not been done.² Aspects of Ms W's presentation that are common among women addicted to heroin include history of sexual abuse in childhood, of being battered by a spouse or significant other, and of earning money by prostitution.³

Ms W's case is unusual in that she remained concerned about her health, including avoiding HIV and other infections and stopping smoking. She was concerned about the effects of smoking on the development of lung cancer and she says that she stopped using drugs while she was pregnant, which, based on clinical experience, is often impossible for many female addicts. It is common for people caught up in compulsive drug use to lose all concern about health and hygiene, but it appears that Ms W remained somewhat careful. The history of armed robbery is somewhat unusual. There have been studies that suggest that women are more likely to share needles than men,⁴ but apparently, Ms W did not engage in this.

Pregnancy poses a unique problem to women addicted to opiates, given the effects of drugs on the fetus. Women who are pregnant deliver infants who are dependent on heroin and require treatment for withdrawal in the nursery. This is also true of women who are treated with maintenance methadone, but several studies have shown that women in methadone maintenance programs while pregnant have better prenatal care and are generally in better health.⁵ Five longitudinal studies evaluating the 2-year development of infants exposed to methadone in utero suggest that methadone has no lasting untoward effects on the fetus.⁶

To understand heroin addiction, it is essential to distinguish between addiction, which involves a compulsion to take drugs, and simple tolerance with physical dependence, which is a normal phenomenon seen in everyone treated with opiates over the long term. In fact, tolerance begins with the first dose of opiates and tends to stabilize with long-acting opiates, making them effective analgesics over time when properly regulated, although studies

demonstrating opioid analgesic efficacy beyond 4 months of treatment are lacking.⁷ For chronic pain treatment, the presence of tolerance and the appearance of withdrawal symptoms when the medication is abruptly stopped does not imply addiction. Addiction is characterized by compulsive drug-seeking behavior such as that described by Ms W after each of her many detoxifications. The diagnostic classification of the *Diagnostic and Statistical Manual of Mental Disorders* (Fourth Edition)⁸ uses the term *dependence* for the diagnosis more commonly known as *addiction*. It distinguishes dependence, a pathological state, from physical dependence, which is a normal effect of opiate use. This dual use of the word dependence often produces confusion.⁹ The current attitudes toward heroin addiction and policies regarding methadone treatment are in part a result of its history in the United States, which warrants review.

History of Opiate Addiction in the United States

Addiction to opiate drugs in the United States dates back to the post-Civil War era, when many wounded veterans were treated with injectable morphine. It was discovered that morphine by injection was more addicting than oral opiates, and a significant number of veterans became dependent, if not addicted. In the latter part of the 19th century and early 20th century, many patent medicines contained opium and led to a rather high frequency of dependence. A census taken in the early 20th century identified 700 000 people, mostly women, as being dependent on opiates.¹⁰ This was alarming to legislators at the time and led to the passage of the Harrison Narcotic Act of 1914 by the US Congress.⁹ The Harrison Narcotic Act, however, took the treatment of opiate addiction away from the medical profession and made it illegal for doctors to treat addiction in their offices. As such, between 1914 and the late 1960s, individuals addicted to heroin in the United States were not treated in medical settings; the only 2 treatment programs available were at a prison in Lexington, Kentucky, and another prison in Fort Worth, Texas.¹¹

Use of opiates has changed significantly in recent decades.¹² Until the 1990s, heroin available in the United States was rather weak, with each bag containing approximately 4% heroin and the rest consisting of inert fillers.¹³ Beginning in the 1990s, large quantities of heroin entered the United States with an average purity about 10 times that of the past; that is, about 45% pure.¹³ Occasional street samples have reportedly been found to have 85% heroin. This increased purity has enabled people to initiate heroin use by smoking it, a rather inefficient way to deliver heroin to the brain because of the heat that inactivates heroin at high temperatures. It is now common for young people to start with smoked heroin and eventually progress to intravenous injection.¹⁴ An increase in opiate use overall has resulted from the increasing availability of prescription opioids for non-medical purposes.¹⁵

Methadone Treatment

Opiate addiction remained a relatively uncommon problem until the 1960s, when it began to increase in and spread beyond the major cities.¹⁰ The introduction of methadone as a treatment in 1964 was a major achievement,¹⁶ and a system of methadone clinics was developed in the early 1970s.^{10,11} Methadone was a major development in addiction treatment because it enables a person who was formerly engaging in often life-threatening heroin-seeking behavior to be treated with a medication that is fully compatible with normal functioning.¹⁶ There are no accurate figures on the number of Americans addicted to opiates at the present time, but most estimates range between 800 000 and 1 million¹⁷; of these, fewer than 200 000 are being treated with methadone maintenance.¹⁸ This is a low percentage compared with Western Europe, where a significantly greater proportion of heroin addicts receive medical treatment.¹⁹

Ms W's case is a good example of the benefits of methadone in that it has stopped her heroin-seeking behavior, her dangerous activities to support her habit, and her use of needles for injection. Methadone is also totally compatible with performance of complex tasks, functioning in school, driving a car, and even practicing law or medicine; vigilance tasks and reaction time studies are performed normally by people treated with the correct dose of methadone.^{20,21} The major disadvantage of methadone is that it introduces a new drug dependence. However, the dependence is much more compatible with routine administration and normal functioning. Heroin is a short-acting drug that requires injection, sometimes as frequently as 4 or 5 times per day, whereas methadone is effective given orally and can be taken once daily for reduction of craving and prevention of opiate withdrawal symptoms. Whereas injections of heroin produce a desired high that makes a person incapable of engaging in productive activity, methadone, given in appropriate doses, produces no such high and does not interfere with functioning. A study of 507 patients in a methadone maintenance program showed that those who remained in the program had a mortality rate of 1%, whereas those who dropped out of the program had an 8% mortality rate (and of the 9 of 110 dropouts who died, 6 deaths were due to heroin overdose).²² Methadone is also a cost-effective treatment.²³ When used for the treatment of pain, methadone has an analgesic duration of only 4 to 6 hours, while it can block opioid withdrawal for 24 hours. Thus, it should be used with caution as an analgesic because of the potential for overdose if taken repeatedly with too short an interdose interval.²⁴

Epidemiology of Addiction and Relapse

Heroin addiction has varied over the years from being a soldiers' disease to a patent medicine problem to an illegal activity. However, in the 1960s and 1970s, heroin abuse and addiction became more widespread in all

levels of US society. Approximately 1% of the population has tried heroin and about 23% of those who try it become addicted.²⁵ The risk factors for addiction include heredity and environment as well as purity of the drug available.²⁶

The natural history of addiction also varies according to hereditary and environmental factors.²⁶ While it has been said that heroin addicts may “mature out” after passing age 40 years, they often evolve to have a different form of addiction, such as alcoholism, if they survive to an advanced age.²⁷ However, the age-corrected death rate for addicts, especially heroin addicts, is much greater than that of controls,^{22,27} due to numerous reasons, including diseases, accidents, and violence. The principal sign of addiction is compulsive drug-seeking behavior with consequent inattention to important health care factors.²⁶

Just as Ms W has been successful with many years of methadone maintenance, patients may spend decades in this type of maintenance program. This leads to an obvious question about detoxification. All studies examining the effects of detoxification have reproduced the experience of Ms W; that is, when individuals stop taking methadone, even if it is tapered gradually so that withdrawal symptoms are not an issue, there is a very high relapse rate.^{28,29} A 2005 Cochrane review found that although some other pharmacologic agents had comparable rates of detoxification with methadone, all were associated with equally high rates of relapse.³⁰ Addiction is basically a memory that has not gone away when the drug is stopped, and long-term relapse prevention is usually required.

There are numerous reasons why relapse occurs in all kinds of addictions when drug taking is stopped. Based on both preclinical and clinical research, 4 major categories of relapse factors have been identified: (1) protracted abstinence symptoms, which are the mild withdrawal symptoms that occur long after the last dose and continue for months after regular dosing has stopped; (2) stress, which was the reason cited by Ms W for relapsing each time that she underwent detoxification; (3) conditioned cues, which are environmental cues consisting of people, places, things, odors, and neighborhoods that have been previously associated with use of drugs³¹; and (4) priming, a small dose of the drug or a similar drug that excites brain systems and produces extreme drug craving and, often, relapse.¹⁷

Ms W's methadone dose deserves comment. Methadone doses have had to be raised in recent years due to the availability of heroin in a relatively pure form. The dose of methadone must be high enough to prevent a “high” from injected heroin through cross-tolerance. A typical history for a patient starting methadone is initially to have rather poor or ambivalent motivation and still wish to obtain the euphoric effects of heroin. Addicts treated with methadone typically try street heroin and find that it is no longer rewarding and also come to realize that the effects of methadone

satisfy the urge to take heroin. Thus, they gradually become heroin-free, as was the case with Ms W.

There are many rumors about methadone being impossible to detoxify from and “getting in your bones,” but the reality is that methadone is simply a long-acting opioid that requires slow detoxification. It has been demonstrated in a double-blind detoxification study that patients do not notice a gradual reduction,³² but there are psychological factors in their wishing to remain in methadone maintenance, as was the case with Ms W. When she got down to a very low dose, she began to worry. Even if one is successfully detoxified and becomes a drug-free outpatient, the relapse rate is very high²⁸ because of the factors alluded to earlier. Ms W should be warned about the risks of stopping methadone, which include not only relapse but also that if relapse occurs, she may no longer be opioid tolerant and fatal overdose is a possibility.

Other Treatment Options for Detoxification

A number of effective medications in addition to methadone have been developed for the treatment of addiction. Several trials of treatment options for heroin are described in the TABLE. Outpatient treatment without the aid of medication, provided commonly in cities throughout the United States, is largely ineffective.^{38,39} A “therapeutic community” involves a residential or inpatient program that in its classic form has been recommended to last 6 months to several years. It can be very effective for individual patients who may learn during the course of these months of treatment to live without opiates and to resist the craving, stress, and conditioned cues that usually cause a relapse. Unfortunately, this is a very expensive form of treatment and is available to relatively few patients. Even patients who successfully go through a long period of therapeutic community still have a high rate of relapse according to careful follow-up studies.³⁷ Treatment with rapid or ultrarapid detoxification under anesthesia in a hospital setting has a higher cost than other inpatient detoxification and increases patient risk but is no more effective than standard detoxification.⁴⁰

Overall, methadone has been the most successful therapy ever designed for the treatment of opiate addiction.⁴¹ Recently, another opioid, buprenorphine, has become available, and Ms W apparently heard about it. She said she is tired of taking methadone and her goal is to become drug free. I believe that clinicians have to respect a patient's wishes, although she must be carefully informed of the risks of relapse after stopping methadone. Buprenorphine is a partial agonist at the μ receptor, while methadone is a full agonist. As a partial agonist, buprenorphine has very high affinity for μ receptors, but it does not activate them fully and even giving much higher doses of buprenorphine will not produce the effects of a full agonist. Thus, buprenorphine can satisfy opiate cravings, prevent opiate withdrawal, and block the

effects of other more powerful opiates because it has such a high affinity for μ opiate receptors.⁴²

With the relatively recent approval of buprenorphine by the US Food and Drug Administration (FDA), the Drug Addiction Treatment Act of 2000, the first change in addiction treatment law since the Harrison Narcotics Act of 1914, was passed to provide greater access to treatment.⁴³ This new law made it legal for physicians to treat addicted patients in their private offices and not require them to go to specialized methadone centers, as was the case previously. There are restrictions, however. To prescribe buprenorphine, a physician has to receive special training, which takes about 8 hours and gives them information about the use and potential for abuse of this medication. Initially, each physician or physician group was limited to only 30 patients taking buprenorphine. Now, the limit has been raised to 100 patients per physician.⁴⁴ Although the law now permits treatment of patients in private offices, buprenorphine, as with all drugs that activate opiate receptors, does have the potential to be abused. Prescriptions can be given for up to 1 month, but such prescriptions must be limited to patients who have demonstrated their reliability. Verification by urine testing and interviews with family members are essential to reduce the risk of diversion and abuse of buprenorphine.

Another pharmacologic treatment option for opiate addiction is opiate antagonists. Naltrexone was approved by the FDA in 1984 to prevent relapse among former addicts,²⁶ although it has been little used since that time. Whereas methadone and buprenorphine satisfy cravings and have clear heroinlike effects, naltrexone simply blocks opiate receptors and prevents readdiction by preventing opiates from reaching μ opiate receptors. While some heroin addicts have been successfully treated with naltrexone, most

do not accept it because it is totally different from heroin or methadone and does not satisfy the desire for an opiate effect.⁴⁵ It is common for a person to be detoxified from heroin, be treated with naltrexone, and, when he or she realizes that getting high is impossible, decide to stop the naltrexone. However, health care professionals with opiate addiction have been treated successfully with naltrexone for many years.⁴⁶ Some physicians, such as anesthesiologists, who must work with opiates on a daily basis have found that naltrexone can take away the temptation and craving and allow them to function normally.⁴⁶ In a 6-month randomized control trial with 627 participants being treated with naltrexone or placebo for alcoholism, those randomized to naltrexone had generally manageable adverse effects.⁴⁷ Any drug-free treatment or treatment with naltrexone will result in loss of tolerance to opioids; thus, a relapse involving the patient's prior dose of heroin after stopping naltrexone will result in overdose and, possibly, death.

Others who may respond well to naltrexone are those under legal constraint, probationers, and parolees who would lose their freedom if they relapsed to opiate addiction.³⁵ Without medication, these individuals have a high relapse and reincarceration rate.³⁵ A new delivery system for naltrexone, a depot preparation that provides therapeutic levels for 30 to 40 days, has been given FDA approval for treatment of alcoholism,⁴⁷ but it also blocks the effects of opioids. Thus, a single injection can block opiate effects and, potentially, could prevent relapse for 30 days. In an 8-week randomized trial of depot naltrexone, 62% of those in the highest dose group (single monthly 384-mg injection of naltrexone) had urine negative for opiates at 8 weeks (when missing samples were assumed to be positive for opiates) vs 25% in the placebo group.⁴⁸ Individuals treated with this method

Table. Selected Randomized Trials of Treatment Options for Opiate Addiction^a

Source	Intervention	No. of Participants	Length of Follow-up, mo	Outcome Measures	Results
Kakko et al, ³³ 2007	Methadone vs buprenorphine	96	6	Treatment completion; urine opiates	No significant difference between groups; 78% completed treatment and 80% of urine samples were opiate free
Doran et al, ³⁴ 2003	Methadone vs buprenorphine	405	6	Cost-benefit analysis	Lower cost and greater efficacy of methadone but was not significantly different
Cornish et al, ³⁵ 1997	Naltrexone vs usual treatment	51	6	Urine opiates; incarceration	Opiates found in urine samples of 8% of naltrexone group and 30% of controls; probation revoked in 26% of naltrexone vs 56% of controls
Bale et al, ³⁶ 1984	Nonrandomized TC vs methadone or other	347	24	Heroin use; convictions; working or attending school	No significant difference between groups
Bale et al, ³⁷ 1980	Random assignment to TC vs methadone	585	12	Heroin use (37% in long-term TC, 47% in methadone, 67% in short-term TC); convictions; working or attending school	Long-term TC and methadone groups were both superior to short-term TC or placebo but not different from each other Outcomes at 1 y: those randomized to methadone and those who stayed in TC >7 wk had best outcome; those who dropped out of TC earlier had significantly worse outcome

Abbreviation: TC, therapeutic community.

^aNo significant adverse effects were reported in the studies. More recent studies do not include TCs because few patients have long-term access to them.

have been able to return to neighborhoods where drugs are available without feeling the temptation to use heroin.³⁵ Therefore, depot naltrexone is a potential option for treating opiate addiction as well as alcoholism, but currently, it is FDA-approved for opiate addiction only in the oral form.⁴⁸

Support groups such as Narcotics Anonymous can be useful adjuncts to pharmacologic therapy. In a longitudinal cohort study,⁴⁹ 142 drug-dependent individuals were followed up for up to 5 years; those who attended Narcotics Anonymous or Alcoholics Anonymous were significantly more likely to be abstinent at 4 to 5 years of follow-up. I refer all of my patients to self-help groups, acknowledging that it is not a treatment but an aid to treatment that can be very beneficial. In the University of Pennsylvania's required medical student course on addiction, we facilitate the students' attendance at an open Alcoholics Anonymous meeting; it is international, available in many languages, and free.

Treatment Recommendations for Ms W

Ms W should be congratulated for all of the progress that she has made in struggling against a very powerful addiction. It could be argued that she should be discouraged from stopping methadone because she has done so well and because of the risks of relapse and possible overdose. However, I have treated patients who, after being fully informed of the risks, succeed in the plan that Ms W has chosen. Therefore, I would warn her of the potential problems and explain that tapering off methadone may be difficult and that she should not feel like a failure if she changes her mind. She should be informed that persons with her history have been successfully maintained on methadone for decades and that the risk of relapse is high. After providing this information, if Ms W continues to wish to transfer her maintenance treatment to buprenorphine, her methadone dose could be gradually reduced over several months to an eventual dose of 40 mg or less. She should be treated by a physician familiar with the intricacies of switching from methadone to buprenorphine because adding buprenorphine too soon after the last dose of methadone could precipitate opiate withdrawal.

The standard dosage form is a buprenorphine/naloxone combination given sublingually. Naloxone is included in the formulation because while it is poorly absorbed via the sublingual route, naloxone reduces the effects of injected buprenorphine, thereby discouraging buprenorphine abuse. After the transition from methadone is complete, the buprenorphine/naloxone can be dispensed in weekly and then monthly prescriptions so it does not intrude on her life as do frequent visits to a methadone program site. This can aid in her ability to obtain employment or go back to school. If successful at each step, she could ultimately consider a course of naltrexone therapy to see if she can make the transition from an agonist (methadone) to a partial agonist (buprenor-

phine) to an antagonist (naltrexone) before she tries to live a completely drug-free life. It should be emphasized, however, that there is no time limit for methadone treatment. If problems develop during her planned switch to buprenorphine, she should consider returning to methadone treatment.

QUESTIONS AND DISCUSSION

QUESTION: You mentioned that general internists would not be allowed to prescribe this new drug unless they completed special training. Where is this given? Also, do you think psychiatrists will ever take care of addicted patients?

DR O'BRIEN: It's very easy to get this training at various meetings like the American Society of Addiction Medicine and the American Association of Addiction Psychiatry, or online.⁵⁰ You're right that there have not been a lot of psychiatrists interested in treating these patients because they are difficult cases. But psychiatrists can no longer avoid the treatment of such patients because the American Board of Psychiatry and Neurology now requires training in the diagnosis and treatment of addiction during residency. Also, many psychiatric patients have some form of substance abuse, whether at an addiction clinic where 70% or 80% of the patients have depression, anxiety disorder, bipolar disorder, or schizophrenia, or at a mental health clinic where, depending on the clinic, 50% to 80% have some substance abuse.⁵¹ When I give talks at meetings of the American Psychiatric Association, the room is overflowing and people are sitting on the floor. When I ask them why they are coming, they respond that most of their patients have substance abuse—it is so common that they cannot keep turning these patients away. Those trained in the past may not have learned much in their residencies about addiction treatment.

QUESTION: A lot of recent interest has focused on the dopamine system in reward and comorbidity. Could you comment on the role of the new atypical antipsychotics for treatment either of addictive states or comorbidity states?

DR O'BRIEN: Antipsychotics are only indicated if there is a coexisting psychotic disorder. I and colleagues at the University of Pennsylvania have been actively investigating comorbidity and have studied olanzapine in cocaine-abusing schizophrenia patients.⁵² Why so many schizophrenia patients abuse cocaine is an interesting question; cocaine should make their schizophrenia worse—and it typically does. But they spend their pensions on it very often, even when they are treated with dopamine receptor antagonists. We randomized patients to olanzapine, an atypical antipsychotic, or haloperidol, and the haloperidol group did somewhat better. The olanzapine seemed to make some of them worse. A lot of substance abuse occurs among patients who need atypical antipsychotics for under-

lying schizophrenia, but there are no data to support their use for addictive disorders.

QUESTION: Ms W is currently using 108 mg/d of methadone. Does the high dose of that medication predict her capacity to be successful with other medications, and how will that complicate her capacity to cut down in the future?

DR O'BRIEN: I would say that it will take several months for Ms W to get down to a low enough level of methadone to be able to be readily transferred to buprenorphine. I would reduce it very slowly and tell her that if she starts feeling craving or sickness that the methadone dose should be increased or the rate of decrease slowed, rather than have her try to supplement with some opiate on the outside. What determines the rate of dose decline is how she's feeling and how she's functioning. If it turns out that she's just better off remaining on methadone, that's okay too. I would tell her that this is potentially a good opportunity for her but she shouldn't feel that it's an absolute necessity.

QUESTION: Could you talk a little bit more about the resistance to calling it addiction and the concomitant negative perception of treating patients with chronic pain with narcotics?

DR O'BRIEN: When I was on the American Psychiatric Association DSM III-R [*Diagnostic and Statistical Manual of Mental Disorders* (Third Edition Revised)] committee, the problem that we had when we were designing a diagnostic classification scheme was that we were trying to come up with a scheme that applied to all drugs of abuse. So that meant nicotine, alcohol, cocaine, heroin, and so forth. People who work primarily with alcoholics don't like to use the word "addiction" regarding alcohol. But it absolutely fits. All of the drugs of abuse activate the reward system, but through different mechanisms. The reward activation produces learning, which results in long-term behavioral effects that increase the probability of relapse. The major problem with terminology is the tendency to stigmatize. However, as more public figures have admitted to addiction problems, we see that it can happen to anyone. I think it is better if addiction is dealt with as an illness instead of as something that implies bad character. Addiction is just another medical problem. I think the stigma is a holdover from the time when addiction was thought of as weakness of will or bad character or criminal activity. Addiction is a chronic disease of the brain with strong heredity components, and it ought to be approached as a medical illness.⁵³

Financial Disclosures: Dr O'Brien reports that he has received consulting fees from Alkermes Inc, the producer of the Vivitrol brand of depot naltrexone.

Funding/Support: This Clinical Crossroads was made possible in part by a grant from an anonymous donor.

Role of the Sponsor: The funder did not participate in the collection, analysis, and interpretation of the data or in the preparation, review, or approval of the manuscript.

Additional Contributions: We thank the patient for sharing her story and for providing permission to publish it.

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