

Running Head: OPIOID TREATMENT OPTIONS

Options and Advances in
Opioid Detoxification and Treatment

Brian Waterman

Abstract

Gives an overall view of the current options an opioid user has for treatment: Opioid maintenance (methadone, LAAM, buprenorphine), detoxification, and naltrexone maintenance. Examines some of the newer options such as ultrarapid naltrexone-assisted opiate detoxification under anesthesia, clonidine-assisted detoxification, and ibogaine treatment.

Introduction

One of the most important controversies in drug addiction treatment is how to treat opioid dependence. While addiction treatment in general is abstinence based, treatment of heroin and other injectable opiates through abstinence has been found to be largely ineffective (Panepinto, et al, 1977; Brown, et al, 1973). High relapse rates combined with the spread of HIV and hepatitis through shared needles have led to a harm-reduction model, generally using methadone maintenance treatment.

While such a therapy makes sense to treatment providers and the users themselves, lawmakers and the community at large have been resistant to this modality (Wodak, 2002; "Flap over Treatment", 1998). Arguments against this form of treatment have ranged from the ethics of substituting one addictive substance for another to the possibility of using other drugs while in treatment to the fear of selling methadone outside the agency to children and others.

NIMBY (Not In My Back Yard) issues also abound, as few communities are willing to host a methadone clinic in their area (Zoning Fight, 1998, discusses a very specific example). The daily dosing requirement of methadone, combined with the desire to meet with clients regularly for counseling and the problems associated with allowing clients to self-medicate insure that there will be a large number of drug addicts in the neighborhood on any given day, a problem that few, if any, neighborhoods want to deal with.

Consequently, there has been a major drive to find alternative forms of treatment, to abandon methadone maintenance entirely, to make methadone maintenance therapy more difficult to obtain, or to make a forced transition from maintenance to abstinence a

necessary goal. These needs have not been expressed by the addicts or the treatment providers, but by the politicians and the public at large, but this in no way makes the issue less important. If anything, this is the one unique issue in drug treatment where an effective treatment is facing elimination in favor of possibly less-effective measures.

This paper will endeavor to examine the benefits and detriments of methadone maintenance treatment and its alternatives, including other opiate substitutions, antagonist treatments, and detoxification and abstinence therapies.

Opioid Maintenance

Methadone

Methadone maintenance treatment began largely in response to the severe problem of heroin addiction in the 1950s and 1960s and reached its peak in the 1970s. New York, in particular, had a major epidemic of heroin addiction, as described by writer Claude Brown's observations (Brown, 1965) in which many of his childhood peers became enslaved to heroin.

New York City opened publicly funded methadone clinics and soon saw their heroin addiction problem cut by 70% (Flap over treatment, 1998). Heroin-related problems, such as crime, overdose hospitalizations and deaths, and needles left in the streets were accordingly reduced, and while people couldn't deny the impact was largely positive at the time, as time has passed, the impact has not been remembered. In line with the current political thinking, New York Mayor Rudolph Giuliani ordered the methadone clinics to require a shift from methadone treatment to abstinence, requiring patients to be completely drug-free within 90 days of admission into treatment.

Rarely is it where a politician is given the authority to make medical decisions, but in the case of methadone treatment, this is common. There is still a frequent belief that drug addiction is a moral issue, not a medical one, and that methadone treatment is at best an admission by treatment providers are not willing to use the time and resources necessary to treat an addiction and would rather take the easier option of enslaving one to another drug.

Research does not support Giuliani's view, and neither does the physical reality of opiate addiction. While clinically, opiate withdrawal does not seem so serious and is in fact exaggerated greatly by the media (reference the film Christiane F. (Weigel, 1981), showing a heroin addict's detoxification as a life-threatening, horrible, bloody experience versus the reality of clinical manifestation resembling a case of the flu), the reality is that opiates make major changes to the pain receptors in the brain, causing a total lack of pain tolerance (Flap over treatment, 1998; Julien, 2001).

The essential result is that detoxification will leave the chronic opiate user in a chronic pain situation. Pain relief will be sought, either through legal means (opiate prescription--essentially maintenance, but unlikely due to the costs and inability to find a doctor and insurance company willing to maintain one on opiates outside a treatment setting) or through illicit means (a return to heroin use). Methadone acts as an effective analgesic, reducing pain while giving a far lesser sense of euphoria and acting as an antagonist to the euphoric effects of other opiates (Julien, 2001).

Reality is that, when methadone is removed, illicit use is most frequently the only option, or at least the only one used. Various studies show an abstinence rate of 15-40%

among addicts who are detoxified off methadone (Panepinto, et al, 1977; Flap over treatment, 1998; Alexandre, et al, 2002).

Of course, the drug addict is a member of society rarely considered by the population at large, a highly disenfranchised type who brought on his or her own problems and thus does not deserve access to tax funding, at least in the eyes of politicians and voters. This could be reasonable, perhaps, if the addict was someone who existed silently on the fringes of society and had no impact on anybody.

In fact, the costs of addiction to society are enormous, so enormous that the costs of maintaining one on methadone and a lifetime counseling regimen are lower than dealing with the costs of incarcerating addicts for drug-related crimes, hospitalizing them for overdoses, treating them for HIV and hepatitis, and burying them when they die prematurely (Alexandre, et al, 2002). Methadone maintenance has been consistently associated with a decrease in illicit opiate use (especially if users are regularly tested), a decrease in criminal activity and associated reduction in incarcerations, a marked increase in employability and earnings (many people are able to hold jobs and indeed careers when under methadone maintenance), an improvement in general health, and an increase in prosocial behavior (Alexandre, et al, 2002). Families of people in methadone maintenance are far more stable than those experiencing active addiction, and indeed many patients are married and have families, beginning treatment as a result of family issues or pregnancy (Panepinto, et al, 1977).

Further complicating the issue with mandating detoxification is that methadone is a more difficult withdrawal than heroin or other opiates (Julien, 2001; Sievenwright & Iqbal, 2002). A user who is unable to detoxify from heroin is even more likely to be

unable to detoxify from methadone. Thus, even when the plan is for short-term maintenance, the reality is that methadone maintenance will continue over an extended period, several years up to a lifetime.

Wodak (2002) states that given the choice between heroin, given at questionable and impure doses and obtained from a variety of sources and under a variety of conditions, and methadone, pure, given daily at a central location but lacking the high of heroin, most users will choose the methadone. People addicted use largely to resist withdrawals, not to obtain the pleasurable effects.

A real issue with methadone maintenance is that practitioners of it may be so accustomed to that modality and so comfortable with it that they are loath to try any other form of therapy. Methadone is generally prescribed by specialized agencies that treat primarily opiate addicts, while those addicted to other substances are referred elsewhere. Yet Brown et al (1973) showed that many patients, particularly younger ones whose addiction histories are shorter may be able to detoxify successfully. They may not be given the chance, especially now that the risk of HIV and hepatitis is a very major concern.

Another issue with methadone treatment in the US is that doses are generally kept low in response to political pressure. Methadone is intended for consumption once daily, with the withdrawals averted so long as the addict appears every morning for his or her dose (generally given in liquid form to avoid illegally checking the medication, then selling it later, a common fear of those in the community). With the suboptimal dose mandated in most US agencies, withdrawal is not averted the full 24 hours in some severe addicts, leading to the drive to use illegal drugs to carry the addict to the next day. This

may in turn lead to the failure of a random drug test, thus leading to sanctions up to and including discharge from methadone treatment. The person who needs the therapy the most is thus excluded from it.

Funding of treatment programs in general and methadone programs in specific tends to be very poor. Fighting the war on drugs has meant that 93% of US drug-related funding has gone for law enforcement and corrections, while only 7% goes for treatment (Wodak, 2002). The treatment money, meanwhile, is further earmarked for politically acceptable means such as general treatment agencies, family reconciliation efforts, and adolescent agencies rather than politically sensitive areas such as methadone.

Consequently, some agencies have to fight yearly for their existence (Massachusetts lawmakers, 2003) and some fail in the fight (Alexandre, et al, 2002).

One alternative frequently considered is to have methadone administered by private physicians. While on the surface this sounds reasonable, there are many problems with this approach. Physicians do not have the ability or time to provide counseling, thus necessitating that the addict be connected to a treatment agency anyway to lessen the likelihood of use of other drugs. Physicians also do not have the ability to see patients daily, at least not without great cost, while distribution of large amounts of methadone leads frequently to the illicit sales and/or overdoses that the general community fears (Florida reports, 2002, discusses that methadone-overdose deaths are becoming common in Florida, causing many to call for the closure of methadone clinics. However, as the writers state, virtually all the deaths are chronic pain patients who are given methadone in quantity by their private physicians, not addicts visiting a clinic for a daily dose). Physicians often have the same biases that others in the general population have towards

drug addicts, possibly greater ones knowing that many people visit them for insignificant medical issues in an attempt to obtain prescriptions for narcotics. Finally, many, if not most heroin addicts do not have adequate insurance coverage (though many methadone users, having reclaimed their lives and developed careers, do) and insurance companies are likely to restrict coverage of methadone treatments as a cost-control measure.

Methadone Alternatives:

LAAM (Levo-alpha-acetyl-methadol) has been studied as a potential alternative to methadone maintenance and shows a great deal of promise. Since methadone lasts for only 24 hours (less in some), patients must either visit the methadone clinic daily or carry extra doses (allowed only in some jurisdictions, with long-term patients, and a target of much of the fear surrounding methadone--people may sell the extra doses).

LAAM, on the other hand, lasts for 48-72 hours, thus mandating only every-other day dosing. Patients may limit their visits to clinics to every two days or three times per week, thus allowing for the scheduling of more patients, the closure of agencies on weekends and holidays, or the planning of brief vacations by the patient.

LAAM is similar in action to methadone, but with a slower onset of action and more protracted withdrawal. Patients have reported they prefer the action of LAAM, in that the onset of effects is smoother, less intense than methadone (Marion, 1995). Like methadone, it works as both an agonist and antagonist, creating a cross-tolerance to opiates and blocking their effects while preventing withdrawal and craving and providing analgesia and sedation.

Though only recently approved by the FDA (1993), LAAM has actually been around for far longer. It was developed in 1948 as an analgesic and was found in its preliminary studies to have an effect on preventing opiate withdrawal, so it was seen as early as 1952 as a possible alternative to the new idea of methadone maintenance.

Research continued throughout the 1970s, consistently showing LAAM to be safe and effective in opiate maintenance, with both therapeutic effects and side effects similar to methadone. However, it never reached the approval process and research was abandoned due to funding issues in the early 1980s.

HIV brought methadone maintenance back into the forefront, and a search for alternatives brought LAAM back into the picture in the late 1980s. LAAM was finally approved by the FDA for use in 1993 and made commercially available under the name "ORLAAM" (levomethadyl acetate hydrochloride oral solution). Its only approved use is within the confines of a methadone treatment program that has been specially approved for the distribution of LAAM, a process that includes training the staff on all aspects of LAAM usage.

LAAM has never been approved for carry doses, so there should be little concern over whether it will make its way to the streets--under current licensing, that would be nearly impossible. In addition, LAAM may not be prescribed outside an agency, so patients who are hospitalized must be switched to methadone in the hospital, as hospitals may not give out LAAM.

This is not a problem, as in practice patients switch easily between the two medications. This is fortunate because of the current lack of agencies that may use LAAM, the unavailability of LAAM outside an agency setting, and the lack of approval

of LAAM in pregnant women. Women on LAAM are to be tested for pregnancy regularly and if found to be pregnant, are switched to methadone--not because LAAM is dangerous to the fetus but because the research has not yet been done with LAAM and pregnancy (Marion, 1995).

Withdrawal from LAAM is an interesting issue. On one hand, the withdrawal appears to be less intense than other opiates, especially methadone. On the other hand, it takes several weeks, so patients who wish to detoxify are given the option of LAAM withdrawal (smooth, but agonizingly slow) or methadone withdrawal (faster, but more painful).

Another option very recently researched is the actual co-prescription of heroin and methadone. A study in the Netherlands (Study researches, 2003) examined the use of pharmaceutical grade heroin in combination with methadone with patients who continued to use illegal drugs and function poorly in spite of long-term methadone treatment. They found some significant improvement in social functioning, mental health, and physical health, though the effects wore off if the heroin was removed and even by the most liberal of standards, 45% still showed significant treatment resistance.

The most promising possibility may be buprenorphine, used commonly in Europe but only recently becoming popular in the US. Buprenorphine is a partial agonist opioid that stimulates the mu receptors, giving an analgesic effect (Julien, 2001). It is used with some chronic pain patients, either sublingually, by injection, or as a transdermal patch (Tzschetke, 2002). It has a low addictive potential, low toxicity, and a very mild side effect profile. A high dose of buprenorphine causes overstimulation of the kappa opioid receptors, leading to a very unpleasant sensation. In addition, there is little respiratory

depression with buprenorphine, so the likelihood of a fatal overdose is rare (Woocher, 1993).

Buprenorphine's partial agonist effects have made treatment providers nervous because the effects cannot be reversed with an antagonist such as naloxone; consequently, an overdose victim cannot be saved in the same fashion a heroin or methadone overdose victim can (Tzschentke, 2002). Still, since the likelihood of overdose is rare, this is not so great a concern. In addition, the side effect profile is far milder than with most opiates.

What makes buprenorphine most promising, however, is that while it has a significant cross-tolerance with methadone (allowing one to switch from methadone to buprenorphine for maintenance with little difficulty), buprenorphine's withdrawal is far easier to handle. There are cases on record of people who have been on methadone for 20 years, switched to buprenorphine for a few months, then detoxified completely within a few days (Woocher, 1994).

Kakko, et al (1994) showed that buprenorphine maintenance is especially valuable for the mild opiate addict. Sweden has very strict standards for who can and cannot receive methadone maintenance and few alternatives for those who cannot. Kakko combined intense psychosocial counseling with buprenorphine in some patients, while combining the counseling with a placebo in others. 75% of the patients receiving buprenorphine remained in treatment for one year and had few relapses, while all of the placebo recipients were out of treatment within 2 months (75% in 2 weeks, even though there was a buprenorphine-regulated detoxification schedule prior to that to minimize withdrawal).

Buprenorphine studies in the United States have not been so promising, with a 20% retention rate the norm, but that is likely due to a suboptimal dose of buprenorphine being used (Law, 2003). U.S. studies have generally used an 8mg dose of buprenorphine, while Kakko, et al (2003) used a 16mg dose. At 16mg, 85-90% of the mu receptors are occupied, while the kappa receptors still are not activated (Law, 2003).

Even if LAAM and buprenorphine were not as effective as morphine (and evidence seems to suggest they are, if not more so), there may be some benefit to their use for political means. Methadone maintenance is a term that invokes a great number of political reactions, while few in the general population have been able to generate opinions about LAAM and buprenorphine. The ignorance of society at large may be used to the treatment field's advantage if LAAM or buprenorphine are able to be presented as medications, as opposed to legal heroin.

Detoxification

Conventional Detoxification

The other possibility is detoxification, an option that the population at large generally favors, but which historically has not looked too promising. Despite the evidence against it, however, the demands of society and of the politicians running it have necessitated research to make detoxification as effective as possible.

Again, buprenorphine has been considered a top contender here. With its minimal withdrawal symptom profile and high cross-tolerance with methadone and other opiates, opiate dependent patients can be maintained on buprenorphine until ready to be detoxified (say, after a successful counseling regimen has been completed) and then be

detoxified in a matter of days with little difficulty. The intense withdrawal experience of methadone has caused many successful patients to relapse or insist the detoxification process be stopped.

Detoxification by naltrexone (an opiate antagonist) is an option for the few who can handle it. Full detoxification occurs in only a couple of days, but the experience is so intense that few can handle it (Vining, et al, 1988). Naltrexone blocks all effects of opiates, so that withdrawal happens immediately. As such, it is frequently used in emergency settings to rescue one from an opiate overdose. Another use is in combination with Talwin (as Talwin NX) as an analgesic available to people at risk of drug abuse--the amount of naltrexone is insignificant in a therapeutic dose, but if the user attempts to overdose, the dose of naltrexone becomes high enough to block all opiate effects.

Naltrexone is probably the best option for detoxification, provided the symptoms can be handled, and as such, there are two regimens currently being used to make naltrexone-induced withdrawal bearable.

Naltrexone given in combination with the anti-hypertensive clonidine has been shown to relieve many, but not all withdrawal symptoms. Clonidine is an alpha-adrenergic blocker that suppresses activity of the locus ceruleus, which is greatly excited during opiate withdrawal (Woocher, 1994). By itself, clonidine has been used with some effectiveness in relieving withdrawal symptoms, but the effectiveness seems to be greater with naltrexone (Vining, et al, 1988), as some withdrawal effects still occur and detoxification takes longer. Even with clonidine, the detoxifying addict will still experience anxiety, restlessness, insomnia, muscle aches, and a feeling of a need for sleep (Vining, et al, 1988).

Naltrexone has a deleterious effect on the reward/pleasure centers of the brain and is also known well by the average addict for blocking all opiates and causing the intense withdrawal symptoms. Thus, noncompliance is a major issue, as it needs to be dosed multiple times per day and users will experience a level of dysphoria while using it. Naltrexone-clonidine detoxification is thus far more effective in an inpatient setting than in an outpatient one, as compliance can be better assured (Vining, et al, 1988).

Ultra-Rapid Opiate Detoxification

The latest experiments take a naltrexone-induced inpatient detoxification to the extreme. In Ultra-Rapid Opiate Detoxification (UROD), the patient is hospitalized, placed under anesthesia, and given naltrexone while unconscious. Thus, withdrawal symptoms are never experienced, as the patient is asleep throughout the entire process. UROD is still experimental, but has gained some extra attention due to it being featured in episodes of the television programs ER and General Hospital (McCabe, 2000).

Several medications are actually given in UROD. The patient is given propofol anesthetic, ondansetron anti-emetic, octreotide anti-diarrheal, naltrexone to initiate withdrawal, and clonidine and benzodiazepines to control withdrawal symptoms (Kleber, 1998). With this many drugs comes a higher risk of side-effects, drug allergies, and interactions, especially with drug abusers who may have physical problems associated with drug abuse.

UROD is still very experimental, but this does not stop proponents from marketing it aggressively. Badenoch (2002) describes a case of a UK anesthesiologist who was the director and principle shareholder of a UROD program. He marketed the

program as a cure-all for opiate addiction, pressured all who answered his advertisements, demanded cash payments up-front, and admitted respondents with minimal pre-treatment examination. One patient who responded had a recent skull fracture, yet his medical records were never requested and his questions about risk were minimized. His money (£4,700) was accepted and he was sent home to return the next morning. That night he used an unknown amount of opiates, yet was not tested prior to treatment. He was placed under anesthesia, administered the treatment drugs, and died that night of complications of anesthesia. The doctor lost his license due to gross malpractice.

Still, with appropriate precautions (not taken above), UROD may be a very viable option. Rabinowitz, et al (2002) reports that relapse rates between traditional methadone detoxification programs and UROD programs are roughly the same provided both are given intensive inpatient treatment and naltrexone-maintained aftercare, but UROD has the added benefit of having no detoxification dropouts, while a methadone detox averages about a 25% dropout rate due to the intensity of withdrawal.

There are many conditions that contraindicate the use of UROD. Many opiate users have thyroid problems that complicate any anesthetic procedure, so thyroid testing is mandatory. Cardiovascular disease is also a problem, in that heart rates may increase 80-100% during the procedure (Bovill, 2000) and drop dangerously low afterward (Bradycardia, or a drop below 50 beats per minute, happens in 50% of patients, Allhoff, et al, 1999). Naltrexone cannot be used in patients with kidney disease, and liver disease is also a contraindication for UROD. Finally, UROD does not work well with polysubstance users, as naltrexone and clonidine have no effect on those withdrawal

symptoms, which will last far longer than the six hours the patient is unconscious (McCabe, 2000).

The biggest problem with UROD, however, may be unrealistic expectations. It is touted as an effortless, effective magic bullet, and in many ways it can be. The patient wakes up six hours later exhausted but fully detoxified (Cribari, 1996). When this is presented as a cure, as it often is, relapse is no less likely than quitting cold turkey. There is a definite psychological withdrawal, as would be expected when somebody quits using drugs after many years and has to learn how to live without the use of substances, and depression and confusion related to the psychological withdrawal is normal (Kleber, 1998). Physical symptoms related to anesthesia will occur, as will some protracted withdrawal symptoms in the form of cramping, diarrhea, sleep disturbances, and fatigue, lasting up to two weeks (Brooks, 1999).

UROD is still experimental, and as such is never covered by insurance (Kleber, 1998, McCabe, 2000). The \$2,500-\$7,500 price tag is usually required up front, though it is not so great a barrier as it appears--it is often paid by friends or relatives expecting a miracle cure. The up-front expense also compares favorably with the \$300/month cost of outpatient methadone maintenance carried over several years (McCabe, 2000).

Still, being an experimental treatment, there is a great variance in what is obtained with the \$2,500-\$7,500 payment. Some programs are strictly one-time treatments involving a 1-day hospital stay followed by a referral to Narcotics Anonymous, while others are full intensive inpatient programs with long-term aftercare with naltrexone prescription throughout. As an experimental treatment, there is inadequate regulation at

this point, and given the extreme vulnerability and desperation of addicts and their families, the potential for unethical practice is immense.

Still, with positive research statistics and the eventual development of standards and accepted practices, UROD may be the most promising solution on the horizon.

Ibogaine--The LSD Treatment Strikes Again

In 1968, Hoffer and Osmond wrote New Hope for Alcoholics, describing anecdotal evidence for the use of LSD-25 psychedelic trips in curing alcoholism. Many people attempted this treatment, including Alcoholics Anonymous founder Bill Wilson (who had been sober for over 30 years, but was curious as to whether it would help other alcoholics). Research did not uphold the claims of Hoffer and Osmond, and soon the practice was discredited and discarded, while LSD wound up creating more addicts than it cured.

Twenty-five years later, the idea of a psychedelic cure for addiction was revisited when the African hallucinogenic ibogaine was proposed as a treatment for opiate, amphetamine, and cocaine addiction. Derived from the Congolese shrub *tabernanthe iboga*, it was originally seen as a possible cure for addiction when New York heroin addict Howard Lotsof took it intending to get high. After a 36-hour drug trip, he no longer craved heroin. He claims then to have shared the drug with six other addicts, five of whom never craved heroin again (Nadis, 1993).

Although Lotsof obtained patents for ibogaine's use in the US, it has never been approved for use, and his main role has been to attempt to motivate research into its use, research that treatment professionals are understandably reluctant to engage in, citing the

LSD travesty. He has traveled to other countries, most commonly the Netherlands and Panama to administer it to other addicts (Koerner, 1999).

It is unknown how or why ibogaine may work. It has been hypothesized as releasing serotonin and inhibiting dopamine (Nadis, 1993) or blocking glutamate (Koerner, 1999). What has been agreed upon is that its experience resembles a "waking dream," with hallucinations followed by introspection where for several hours the user watches memory movies of where he or she has done damage to family and friends through addiction. Eventually, the user may crash from exhaustion, but upon awakening will no longer crave opiates. The subjective feeling of opiate withdrawal does not appear to occur under the influence of ibogaine (Alper, et al, 1999; Koerner, 1999).

Ibogaine, however, appears to be a very dangerous substance, and research has been limited due to safety concerns. Seizures have been reported in dogs and monkeys, and there are many reports of deaths among African users. Stanley Glick, introduced to ibogaine by Lotsof, is developing an alternative form of ibogaine, 18-methoxycoronaridine, in response to his own research that shows ibogaine kills many cells in the cerebellum (Koerner, 1999). Human research has been done primarily by Lotsof overseas, and what minimal research has been allowed in the US has been done with very minimal doses only to gauge safety of dose (Alper, et al, 1999).

Lotsof has admitted to inflating his initial claims of success when asked to produce proof of his research but now claims that 20 of 30 patients lost their craving and 12 remained drug-free after six months (Cowley & Heiman, 1993). Still, this amounts to only a 40% treatment rate after six months, hardly an earth-shattering total considering the considerable risk involved, and questionable considering this is an anecdotal report

presented by a primary proponent with a major financial stake in the development of ibogaine as a treatment.

In short, it appears that ibogaine research has nowhere to go but down. The risks appear to outweigh the benefits, the most similar experiment (LSD for alcoholism) was a dismal failure, and the other alternatives discussed in this paper appear to be safer and more effective.

Conclusion

The best available option appears to be maintenance leading to detoxification. Maintenance on methadone, though, is doomed by a lack of acceptance. LAAM appears to be the best option, with buprenorphine another possibility. Buprenorphine may be the best detoxification option available currently, though once the problems with UROD are worked out, it may become the best option.

Any treatment program for opiate addiction needs to address both the physical and psychological aspects. This is the case with any addiction, and is the primary reason that allowing general practitioners to prescribe methadone for maintenance would be a grave mistake. It is too easy to see opiate addiction simply in a physical sense, and thus to consider maintenance without counseling, UROD without aftercare, or ibogaine treatment without aftercare to be acceptable options. Likewise, research shows that unassisted detoxification with counseling is a failure, as the physical aspect of the addiction is too overwhelming.

Political pressure has driven much of the research on opiate treatment. While this has led to some unacceptable options (such as Giuliani's insistence on making all addicts

drug free within 90 days regardless of their needs), it has also forced the research and development of many plausible detoxification options (buprenorphine, clonidine-naltrexone combinations, UROD) when lifetime methadone maintenance has become an easy and overused option. Cost-effectiveness has also driven much of the research, and \$300/month for life for methadone maintenance is rightfully being challenged by less expensive and less permanent options. If they turn out to be safe and effective, then there may actually be hope for a condition whose best option to this point has been lifetime enslavement to a legal form of addiction.

References

- Alexandre, P; Salome, H; French, M; Rivers, J; & McCoy, C (2002). Consequences and costs of closing a publicly funded methadone maintenance clinic. Social Science Quarterly, 83, 2, 519-536.
- Allhoff, T; Renzing-Kohler, K; Kienbaum, P; Sack, S; & Scherbaum, N (1999). Electrocardiographic abnormalities during recovery from ultra-short opiate detoxification. Addiction Biology, 4, 337-344.
- Alper, K; Lotsof, H; Frenken, G; Luciano, D; Bastiaans, J (1999). Treatment of acute opioid withdrawal with ibogaine. The American Journal on Addictions, 8, 234-242.
- Badenoch, J (2002). A death following ultra-rapid opiate detoxification: the General Medical Council adjudicates on a commercialized detoxification. Addiction, 97, 475-477.
- Bovill, J (2000). Opioid detoxification under anaesthesia. European Journal of Anaesthesiology, 17, 657-661.
- Brooks, J (1999). Toronto clinic offers addicts rapid detox (1999). Canadian Medical Association Journal, 160, (1), 14.
- Brown, C (1965). Manchild in the Promised Land. New York: Signet.
- Brown, E; Benante, J; Greenberg, M; & MacArthur, M (1975). Study of methadone terminations. British Journal of Addiction, 70, 83-88.
- Cowley, G & Heiman, H (1993). A psychedelic trip to the end of addiction. Newsweek, 122, (8), 45.

Cribari, L (1996). Experts watch first U.S. trial of rapid detox program. Behavior Health Treatment, 1, (4), 6-7.

Flap over treating heroin addiction. (1998). Christian Science Monitor, 90, 189, 4.

Florida reports increase in methadone-related deaths. (2002). Alcoholism & Drug Abuse Weekly, 14, (45), 1-6.

Hoffer, A & Osmond, H (1968). New Hope for Alcoholics. New Hyde Park, NY: University Books.

Julien, R (2001). A Primer of Drug Action (9th ed.). New York: W.H. Freeman & Co.

Kakko, J; Svanborg, K; Kreek, M; & Hellig, M (2003). 1-year retention and social function after buprenorphine-assisted relapse prevention treatment for heroin dependence in Sweden: a randomised, placebo-controlled trial. Lancet, 361, 662-668.

Kleber, H (1998). Ultrarapid opiate detoxification. Addiction, 93, (1), 1629-1633.

Koerner, B (1999). For heroin addicts, a bizarre remedy. U.S. News & World Report, 127, (22), 82.

Law, F (2003). Maintenance buprenorphine for opioid users. Lancet, 361, 9358, 634-635.

Marion, I (1995). LAAM in the treatment of opiate addiction [TIP 22]. Rockville, MD: Center for Substance Abuse Treatment.

Massachusetts lawmakers at odds over Medicaid coverage of methadone. (2003). Alcoholism & Drug Abuse Weekly, 15, (22), 1-4.

McCabe, S (2000). Rapid detox: Understanding new treatment approaches for the addicted patient. Perspectives in Psychiatric Care, 36, (4), 113-119.

Nadis, S (1993). The mystery of ibogaine: can an African psychedelic cure addiction?

Omni, 15, (9), 14.

Panepinto, W; Arnon, D; Silver, F; Orbe, M; & Kissin, B (1977). Detoxification from methadone maintenance in a family-oriented program. British Journal of

Addiction, 72, 255-259.

Rabinowitz, J; Cohen, H; & Atias, S (2002). Outcomes of naltrexone maintenance following ultra rapid opiate detoxification versus intensive inpatient detoxification. The American Journal on Addictions, 11, 52-56.

Sievewright, N & Iqbal, M. (2002). Prescribing to drug misusers in practice--often effective, but rarely straightforward. Addiction Biology, 7, 269-277.

Study prescribes heroin in combination with methadone. (2003). Alcohol & Drug Abuse Weekly, 15, (31), 3-4

Tzschentke, T (2002). Behavioral pharmacology of buprenorphine, with a focus on preclinical models of reward and addiction. Psychopharmacology, 161, 1-16.

Vining, E; Kosten, T; & Kleber, H (1988). Clinical utility of rapid clonidine-naltrexone detoxification for opioid abusers. British Journal of Addiction, 83, 567-575.

Weigel, H (1981). Christiane F. [motion picture]. West Germany: Maran Film.

Wodak, A (2002). Methadone and heroin prescription: babies and bathwater. Substance Use and Misuse, 37, (4), 523-531.

Woocher, L (1994). Research reveals more treatment option for opiate addiction. Addiction Letter, 10, (8), 1-2.

Zoning fight over Michigan clinic leads to restrictive proposal. Alcoholism & Drug Abuse Weekly, 10, (21), 3.