Methadone Treatment for Opiate Addiction
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Opiate addiction is a large health problem in the United States. It affects not only the addicted individuals but also society as a whole. The problems caused by opiate addiction include harmful effects on a person’s physical and mental health, which leads to substantial morbidity and mortality. It also causes many social problems such as transmission of HIV and hepatitis C through the sharing of needles, increased crime, increased health care and law enforcement costs, family disruption and lost production. Due to the substantial harmful effects on addicted individuals and society, the treatment of opioid addiction is an important aspect of health care. Over the years many different ways to treat opioid addiction have been developed and implemented with varied results. Some examples include detoxification, cognitive behavioral therapy, and methadone treatment. In recent times methadone has become a viable option for addicted patients, with many doctors preferring it compared to other methods such as stopping “cold turkey.” While methadone has been proven as an effective treatment option, many have argued that it only prolongs the addiction and does not cure it. This has led to an ethical dilemma for many health care providers, because they must decide if they should use methadone or other treatment options that have a higher rate of relapse, such as rapid detoxification. Also, because of the nature of this type of treatment and the strong potential for abuse of methadone, many strict regulations are placed on the prescribing and dispensing of the drug. This also leads to doctors and pharmacists being less willing to treat their addicted patients and in turn depriving them of the best possible treatment available.

Methadone is a synthetic opioid, used medically as an analgesic, anti-tussive, and anti-addictive for patients dependent on other opioids. Although it is chemically unlike heroin or morphine, it acts on the opioid receptors and produces similar effects. Much like the above-mentioned drugs it is a full mu-receptor, and this is the reason that it produces effects similar to that of other opioids. Some of these effects include analgesia, euphoria, respiratory depression, drowsiness, lightheadedness, weakness, fatigue, dry mouth, difficulty urinating, difficulty breathing, nausea, constipation, and possible skin reactions. All of these are in line with other drugs that belong to the same class as methadone.

Methadone’s most common use is for the treatment of opioid addiction. It is this usage that leads to the ethical dilemma that the drug poses for some health care professionals. The reasons that methadone is used as a treatment for addiction are mainly based on it’s pharmacokinetics. First of all it has cross-tolerance with other opioids such as heroin and morphine, which are commonly abused. Also, it has a long duration of action with the result that oral dosing will help to stabilize the patient by stopping the withdrawal symptoms from beginning. This in turn leads to less cravings and less of a need to attain more heroin. Finally it can partially block the euphoric “rush” experienced by
intravenous heroin and morphine users. The ideal pharmacokinetic profile of methadone, along with the relatively cheap price, has led to its use as an anti-addictive agent.

On the other hand, as with all other opioid drugs, patients taking methadone can develop tolerance and dependence on the drug. Tolerance to the analgesic effect of methadone occurs after a couple of weeks, whereas tolerance to respiratory depression, sedation, and nausea, occurs after 5 to 7 days. When methadone is being used as an anti-addictive rather than an analgesic, it does not matter that tolerance develops to the drug. This is also true for the respiratory depression, sedation, and nausea, because these are adverse side effects, and a decrease in their occurrence is actually welcomed by patients and doctors alike.

Dependence on methadone is much more of a problem. It is this aspect of the drug that has given rise to some of the objections health care providers have towards using methadone as an anti-addictive. Patients on the drug long-term will develop dependence on the drug, much like they were previously dependent on heroin or morphine. Although they are no longer having intense cravings, they still need some type of opioid in their body in order to stave off withdrawal symptoms, and methadone becomes that alternative. It is because of this that prescribing methadone becomes an ethical dilemma for doctors and pharmacists alike. Essentially by prescribing methadone to patients, doctors are continuing their addiction to opioids, albeit in a more stable and ultimately less dangerous way.

While this may make some health care professionals avoid methadone for treatment of their addicted patients, one must look at all the facts about opioid addiction and the different types of treatment before making this decision. The nature of heroin addiction must be explored. Also the efficacy and safety of methadone management must be examined before a healthcare professional can make a decision on whether or not to use it as a treatment option for patients.

To understand the benefits of methadone for addicted patients, one must examine heroin and the effects of its long-term use. Compared to other opiates, heroin is the most common reason for the use of methadone as addiction management. Heroin is the most rapid acting, commonly abused, and produces the greatest high of all the opiates. The short-term effects of heroin are similar to most other opiates, but usually are more intense. Abusers typically report feeling a surge of an extremely pleasurable sensation, often called a “rush.” The intensity of this rush is a function of how much is taken, the route of administration, either intravenous or intranasal, and the purity of the drug. After the rush, the user will usually be drowsy for several hours. Cardiac function will slow, as well as respiratory depression. Sometimes the respiratory depression can lead to death. Heroin overdose is a particular risk on the street, where the amount and purity of the drug cannot be accurately known.

The long-term effects of heroin can be very detrimental to the health of a patient. Some of these effects can lead to chronic problems and even death. Some of the more important effects noted include scarred and/or collapsed veins, bacterial infections of the blood
vessels and heart valves, abscesses, and liver or kidney disease. Lung complications may result from the poor health condition of the user and the effects of heroin on the respiratory system. Another large problem is the sharing of needles among users, which can lead to infections with hepatitis B and C, HIV, and a host of other blood borne viruses, which drug abusers can then pass on to their sexual partners and children. These long-term effects are prime examples of the need for a substance-abuse treatment that is as effective as possible for heroin abusers.

Besides the aforementioned negative effects on a user’s health, the most devastating effect of heroin use is the addiction itself. Addiction is a chronic, relapsing disease that leads to compulsive and drug-seeking behavior. It also leads to neurochemical and molecular changes in the brain that is a direct effect of the heroin actions in the brain. Over time the patient becomes more and more dependent on the drug and the primary goal of their life becomes the acquisition and use of the drug, regardless of the negative effects on their health, family, friends, occupation, and life in general.

After chronic use of ever-increasing doses, physical dependence develops in the user. The body adapts to the presence of heroin, and withdrawal symptoms occur if the user does not take the drug on a regular basis. Withdrawal may occur within a few hours after the last time the drug is taken. Symptoms of withdrawal include restlessness, muscle and bone pain, insomnia, diarrhea, vomiting, cold flashes with goose bumps, and leg movements. Major withdrawal symptoms peak between 24 and 48 hours after the last dose of heroin and subside after about a week. As is often the case, even after the withdrawal symptoms subside, a heroin user can remain addicted to the drug. This manifests itself weeks, months, and even years later as cravings and relapse. It is a combination of the intense withdrawal symptoms and long-term addiction that oftentimes makes it necessary to use some kind of medication management, such as methadone, in heroin addicted patients.

It is evident that treatment is necessary for patients addicted to heroin, as well as those addicted to other opiates. The question is which one to use and whether methadone treatment can be deemed unethical. Besides methadone, another common type of treatment is detoxification. Detoxification programs aim to achieve safe and humane withdrawal from opiates by minimizing the severity of withdrawal symptoms and other medical complications. The primary objective of detoxification is to relieve withdrawal symptoms while patients adjust to a drug-free state. Although, detoxification generally has good short-term success, it is not actually a treatment for addiction and thus is usually the first step in long term treatment that can be either drug-free, medically managed or a combination of both.

The next step for most patients is some type of treatment program. It is at this step that methadone can play an important and crucial role in the treatment of heroin addiction. An obviously important question at this point is whether methadone programs are more efficacious than behavioral therapy alone. To determine the best possible treatment program one must look at studies that compare psychosocial treatment, methadone treatment, and a combination of both.
A review article produced by the Cochrane Collaboration titled, *Psychosocial and pharmacological treatments versus pharmacological treatments for opioid detoxification*, is a good article comparing methadone alone or methadone combined with psychosocial treatment during the detoxification stage. The primary outcomes for this review article were: completion of treatment as number of participants completing the detoxification program, use of opioid drugs measured as number of participants with positive urinalysis during the treatment, results at follow-up as number of participants abstinent at a follow up date. The secondary outcomes measured included: compliance, use of other drugs of abuse, and mortality.

The methadone treatment in this study was compared to 4 different types of psychosocial treatment. The first type of psychosocial treatment was contingency management. Contingency management is described as a behavioral therapy based on positive/negative reinforcers. If the patient has a negative urinalysis they are rewarded with payment or increase in their methadone dose. Another similar treatment program is the community reinforcement approach, in which patients attend therapy sessions that provide them with relationship and employment counseling and help them to develop new recreational activities. The third type of non-drug treatment was psychotherapeutic counseling, which entails the assessment of individual patients needs, and the provision of services to meet these needs. The fourth approach used in the studies examined was family therapy. Family therapy takes a structural approach that places an emphasis on developing appropriate boundaries and limits before introducing an intervention.

The results of this review showed that there is promising benefit in the combination of psychosocial treatment and methadone treatment for opioid addicted patients during the detoxification phase of their treatment. This was true for completion of treatment, use of opiates, results at follow-up, and compliance. The implications for practice derived from the authors of this study are that psychosocial treatments should be offered in addition to pharmacological detoxification treatments, but they also go on to state that after the detoxification stage longer-term drug-free treatment should be administered.

The next study looked at was: *An overview of systematic reviews of the effectiveness of opiate maintenance therapies: available evidence inform clinical practice and research*. This study is especially useful for choosing a management therapy for patients, which is a crucial part of treatment due to the chronic and relapsing nature of opiate addiction. The study conducted a narrative and quantitative summary of the five Cochrane reviews on substitution maintenance treatments for opioid dependence. Methadone maintenance treatment (MMT) was compared to methadone detoxification treatment, no treatment, different dosages of MMT, buprenorphine treatment, and heroin maintenance treatment. The outcomes considered in the reviews were retention in treatment, heroin use during treatment, use of other drugs during treatment, mortality, criminal activity, and quality of life.

The data observed throughout the review pointed to methadone maintenance treatment as the most successful of all the treatment programs studied. Methadone maintenance
treatment was found to be more effective for both retention in treatment and heroin use during treatment. Mortality could not be proven better in any of the groups because of the low occurrence of death during the trial. Criminal activity, quality of life, and use of other drugs during treatment were not studied enough in the reviews in order to find a significant difference between the groups.

The main outcomes considered in the studies observed were retention in treatment and illicit use of heroin. The ability to retain patients in treatment is one of the most important aspects of the studies because it can be used to gauge effectiveness of the overall treatment. This is especially true when looking at mortality, because observational studies showed high rates of mortality in heroin-addicted patients early after discharge from treatment. The illicit use of heroin as a main outcome is also a crucial outcome for this study. The reason for this is that oftentimes the illicit use of heroin leads to many risk-taking behaviors. Substance abusing patients will spend most of their time looking for, buying, and abusing heroin, and this leads to criminal activity. Thus, the reduction of the illicit use of heroin should promote physical, social, and behavioral changes that lead toward social integration. When looking at the above two outcomes, it clear that methadone maintenance therapy is the best option available to treat patients addicted to heroin.

Although methadone has faced criticism in the past for a variety of reasons, it is evident after looking at the literature available, that it is the best option for heroin addicted patients. Studies have shown that not only does it keep patients in treatment for longer periods of time, but it also helps to prevent the illicit use of heroin. Also, it has been proven to be a good option in combination with psychosocial treatments during the detoxification phase and throughout maintenance treatment. This type of comprehensive treatment, combining elements of pharmacology and psychology, should not be avoided just because the drug has its detractors or because it is regulated so heavily.

With all of this evidence pointing to the effectiveness of methadone treatment, why is there still a controversy surrounding it’s medical use? According to Dr. Marc Shindermann from the Center for Addictive Problems, it is a combination of common sense, personal experience, and prejudice all being called upon by those finding fault with methadone maintenance treatment. The controversy is mainly due to treating addicted patients with what is technically an addictive drug itself. Although dependence does occur in patients, because of cross-tolerance, this dependence is usually already present before starting methadone treatment. Patients that seek out methadone treatment have usually been addicted to other opioids for a long period of time and are already tolerant and dependent on opioids and their effects. Patients who relapse during treatment mostly use short-acting opioids such as heroin. The slow onset and long duration of action of methadone does not lend itself to abuse, and thus patients looking for a “high” rarely abuse methadone to achieve it.

Another reason that people deem methadone use as unethical is just a basic misunderstanding of addiction and addiction treatment. Many in our society look at drug use and addiction to drugs as a weakness or personality flaw. This stigma has been with
us for years, and only in recent times has it been proven wrong. Scientific study of addiction has shown that it is indeed a disease and should be treated like any other. Although, science proves otherwise, many in our society look down on addicted patients, and this is partially the reason methadone treatment is a controversial topic.

Criticism of methadone treatment has also come from a group of people that one might not expect, which is other recovering addicts, such as those in alcoholics anonymous or narcotics anonymous. These groups tend to extol the virtues of an abstinent recovery, with no concessions, even for a drug as highly addictive as heroin. Patients who are able to achieve sobriety through these types of treatment programs don’t realize that for most people it will not be enough. Addiction, like any other disease, has different levels of severity. Some patients will respond to non-pharmacological treatment, much like hypertensive patients who get to appropriate levels through diet and exercise alone, while others need pharmacologic treatment. This is also true for addicted patients who can achieve recovery through counseling and 12-step programs, while others may need the help of medications to achieve their goals.

Probably one of the most often cited reasons for the avoidance of methadone treatment is the problem of drug diversion and abuse. As stated before, methadone is an opiate and thus there is the potential for it to be abused. Like every other drug in the class, it can cause a euphoric high in people who take it for the wrong reasons. Also, much like other drugs in the class people can become dependent on the drug and in turn addicted to it. Because of this there are many problems that have been attributed to the prescribing and dispensing of this medication.

An article from the U.S. Department of Justice entitled, Methadone Diversion, Abuse, and Misuse: Deaths Increasing at An Alarming Rate, examines the problem. One of the most alarming facts stated in the article is that deaths attributed to methadone abuse have risen from 786 in 1999 up to 3,849 in 2004. While this increase is an alarming problem it is not only a problem for methadone. This is because deaths related to other opiates have also increased during the same time span. In 1999 other opiates caused 2,757 deaths and increased to 5,242 deaths in 2004. This specific example shows that although methadone deaths increased, the real problem is the increase of opioid caused deaths overall. Looking at this fact it becomes evident that there is need for an increase in treatment of addicted patients in order to prevent mortality, which methadone maintenance treatment can do if prescribed and used correctly.

The reasons for the increase in methadone diversion proposed in the article are numerous and varied. In order to ensure the best possible outcomes and least amount of diversion, these reasons must be considered. One of the most obvious reasons for the increase in abuse and death is the increased prescribing of methadone. The greatest increase occurred at the practitioner level. This means that the increase was due mostly to the prescribing of methadone for pain and not as an anti-addictive. An obvious way to get around this increase is to limit methadone prescribing to mostly patients in addiction treatment; because it is ideal for addiction treatment, while there are other drugs that can be used for pain. Another reason given for the increase is theft incurred during transit from
manufacturers to businesses and theft from businesses and reverse distributors. This is a problem that is inevitable for any controlled substance, but the risk can be lessened by an increase in security and better-trained employees. Diversion also occurs at the level of pain management facilities, hospitals, pharmacies, general practitioners, and family and friends of patients. Once again, this is inevitable for any controlled substance being dispensed to the public, but it is not a reason to completely stop dispensing a medication that can benefit so many people. Strong FDA regulations help to alleviate this problem and if necessary regulations can be increased even more. Also, strict drug testing and background checks on employees will help with this aspect of the problem.

Finally, part of the problem with methadone misuse and diversion lies with the information available to the patients prescribed such medications. It is here that a pharmacist can make the biggest difference when it comes to misuse and diversion of the drug. Many deaths and nonfatal overdoses are the result of misuse of legitimately prescribed methadone by individuals who may not have been properly counseled by their physicians about the dangers of taking the drug in ways other than those prescribed. Pharmacists can greatly increase the safe use of this drug by checking for drug interactions and warning patients about possible drug interactions they may encounter. This includes using the drug with other opioids and alcohol, two of the most common reasons for overdose. Also, pharmacists can explain to patients the importance of taking their prescribed dose and never sharing their medication with others, because of the high risk for an opiate-naïve patient to overdose on methadone. Obviously this will not completely cure the methadone abuse problem, but it can help to better the prospects of a patient being treated in a safe and efficacious manner.

After examining all of the possible negative consequences of methadone maintenance therapy it is true that there are inherent problems with the drug. Detractors of methadone use do have valid reasons against this form of treatment, but after considering all of the facts it is clear that the pros outweigh the cons. The health care world can not deny the most efficacious treatment available to opioid addicted patients simply because they misunderstand the nature of addiction or of the drug itself. Also, the possibility of diversion is not a good enough reason in and of itself to stop the legal use of methadone. If practitioners used this logic, almost all controlled substances would be banned. Instead of avoiding the prescribing and dispensing of methadone, the government has instead placed strict regulations on the use of methadone.

The addictive nature of methadone and possibility for abuse has led to these regulations. The system in place for prescribing and dispensing methadone makes the ethical choice of whether or not to make it available to patients much easier. With these regulations health care professionals can feel much more comfortable when dispensing the medication to patients. The Michigan Department of Community Health Office of Drug Control Policy has set up enrollment criteria for methadone maintenance and detoxification programs. This is a legal guideline used to ensure people who truly need the drug are actually getting it.

The first step in the process is for the doctor to determine that the patient is actually
addicted. Tolerance and physical dependence are normal consequences of sustained use of opioid analgesics and are not synonymous with addiction; therefore “pseudo-addiction” must be ruled out. Opioid treatment programs (OTP) are not pain clinics and they should not treat pain. In order to prescribe methadone for addiction, a special license is required and thus the clinics should not be used to treat pain in any way. If a patient needs pain management, they may be prescribed other medications separately. The methadone used in treating addiction is not a replacement for other necessary pain management. Because of this, on-going coordination between the OTP physician and pain management physician is required. An OTP using methadone for the treatment of opioid dependency must be:

1. Licensed by the state as a methadone provider
2. Accredited by the Commission on Accreditation of Rehabilitation Facilities, the Council on Accreditation or the Joint Commission on Accreditation of Healthcare Organizations
3. Certified by the Substance Abuse and Mental Health Services Administration as an OTP
4. Licensed by the Drug Enforcement Agency

The next step is determining if the patient meets the enrollment criteria. Decisions to enroll a client for methadone maintenance is based on the current Diagnostic and Statistical Manual criteria. A patient under 18 years of age is required to have had at least two documented unsuccessful attempts at short-term detoxification and/or drug-free treatment within a 12-month period, along with parental consent, to be eligible for the maintenance treatment. Patients must be given the options for substance abuse treatment including non-OTP options such as methadone-free outpatient, intensive outpatient, and residential treatment. Clients are informed that they must attend daily for dosing, must comply with the individualized treatment plan, and toxicology testing.

The next step outlined is treatment and continued enrollment. Client needs and rate of progress vary from person to person, thus treatment plans are individualized. Maintenance treatment will be discontinued within two years unless, based on the recorded clinical judgment of the staff physician, justification is provided to continue therapy. Patients must take drug tests throughout treatment to ensure they are no longer abusing other drugs. For clients who are struggling to meet the objectives in their individual treatment plans, OTP medical and clinical staff must review the course of treatment and make adjustments. Examples of such adjustments are changing the methadone dosage, increasing the length or number of counseling sessions, incorporating specialized cocaine or anxiety specific group sessions, and use of compliance contracts.

The last step of methadone maintenance treatment outlined in the guideline is discharge/termination criteria. Clients must be discharged from services when treatment is completed or they may be terminated if there is clinical or behavioral noncompliance. As part of the termination process, reduction of the dosage to a medication-free state should be expedited within safe and appropriate detoxification medical standards whenever possible. There are many reasons given for discharge or termination. The first
is completion of treatment. Completion of treatment is determined when the patient has fully achieved the goals listed in their treatment plan and when the patient no longer needs methadone as a medication. Clinical noncompliance is another reason for termination. Clinical noncompliance includes having been in the program two years without making enough improvement as determined by the clinical staff. Another example of noncompliance is repeated use of other drugs that are not allowed in the program. Finally, failure to attend scheduled counseling sessions or other clinical activities is an example of noncompliance. The final reason for termination is behavioral noncompliance. This includes possession of a weapon on OTP property, assaultive behavior against staff or other patients, threats against staff, diversion of controlled substances, adulteration of toxicology samples, sexual harassment, and loitering on the clinic property or within a one-block radius of the clinic. By following these guidelines doctors and pharmacists can ensure that patients are getting the best possible treatment, while also avoiding misuse of the drug.

In conclusion, it is evident that the ethics of methadone maintenance therapy are complex and may pose a dilemma for doctors and pharmacists alike. Opponents of methadone therapy cite addiction, abuse, and diversion as the main reasons to avoid its use. While these are valid arguments, they are not enough to deny patients treatment with methadone. Opioid addiction is an extremely intense, devastating disease, and treating it is often very difficult, thus patients should have this effective treatment made available to them. The safety and efficacy of methadone treatment has been proven in many studies and in the real world through years of extensive use. Although there is a risk of addiction and diversion, the strict rules and regulations have lead to a much safer environment for patients. The strict regulations, proven safety and efficacy, and benefits that patients will get from the drug should put doctors and pharmacists at ease when prescribing and dispensing methadone. Considering all of the facts, it is clear that methadone maintenance therapy is a very ethical treatment program.


