

Comparison of methadone and buprenorphine

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ABSTRACT

Opioid addiction is one of the biggest health and social problems in the world, affecting all cultures, creating social problems, and causing death by affecting the individual's health. There are many alternative drug types in the treatment of addiction to opioids. Buprenorphine and methadone are the two main and most effective agents in the treatment of opioid dependence. Both agents are structurally similar, but have advantages and disadvantages in their use. The aim of this review is to discuss the similarities and differences of buprenorphine and methadone and discuss the role of both drugs in the treatment of opioid dependence scientifically. Thus, it is aimed to contribute to effective and multi-choice treatment methods for addicts by providing general information to experts, researchers and policy makers about opioid addiction treatment. (*Anatolian Journal of Psychiatry* 2019; 20(special issue.1):119-121)

Keywords: buprenorphine, methadone, opioid addiction

Metadon ve buprenorfinin karşılaştırılması

ÖZ

Opioid bağımlılığı, tüm kültürleri etkileyen, sosyal problemler yaratan, bireyin sağlık durumunu etkileyerek ölüme yol açan dünyanın en büyük sağlık ve sosyal problemlerinden biridir. Opioidlerin bağımlılığının tedavisinde çok seçeneikli ilaç çeşitleri bulunmaktadır. Buprenorfin ve metadon opioid bağımlılığının tedavisinde başlıca ve en etkin kullanılan iki ajandır. İki ajan yapısal olarak birbirine benzemekle beraber kullanımında avantajları olduğu gibi dezavantajları da vardır. Bu derlemenin amacı buprenorfin ve metadonun benzerliklerini, farklılıklarını ve birbirine yönelik üstünlüklerini tartışarak opioid bağımlılığı tedavisindeki iki ilacın da rolünü bilimsel olarak ele almaktır. Böylece opioid bağımlılığı tedavisi ile ilgili uzmanlara, araştırmacılara ve politika geliştiricilerine genel bir bilgi sunarak bağımlılar için etkin ve çok seçeneikli tedavi yöntemlerine katkı sağlamak hedeflenmiştir. (*Anadolu Psikiyatri Derg* 2019; 20(özel sayı.1):119-121)

Anahtar sözcükler: Buprenorfin, metadon, opioid bağımlılığı

INTRODUCTION

Opioid addiction, commonly known as heroin addiction, is one of the leading health and social problems in the world in terms of creating an international smuggling environment, affecting all cultures, creating social problems, affecting the individual's health and death.¹ Opioids are a class of drugs that are derived naturally or synthetically but are defined as psychoactive substances with morphine-like effects. These are drugs such as codeine, oxycodone, heroin, methadone and buprenorphine.² Opioids can also be legally prescribed to patients for pain management of acute, chronic or surgical pain.³ Patients who take these drugs in the long term

often develop tolerance or need increased dosages to achieve analgesia. People who use these substances can become opioid addicts by increasing the dose to prevent withdrawal symptoms.² Some people may develop dependence on opioids in the use of prescribed drugs for other purposes despite medical, legal and social consequences.⁴ In particular, this potential for addiction concentrates more on young people.³ Heroin detoxification and opioid maintenance therapy with both methadone and buprenorphine are used as current treatments in many western countries such as USA, UK, France, Australia, Canada due to this increasing and growing heroin use.⁵ Especially when used in combination with psychosocial

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interventions, both methadone and buprenorphine have been shown to be more effective for opioid dependence than all other treatment types.⁶ Turkish Republic of Northern Cyprus (TRNC) in 2002 and also in Turkey in 2010, has been the permission of buprenorphine tablets. However, there is no consent in TRNC and Turkey for methadone use. Despite the widespread use of buprenorphine in particular TRNC, there weren't switch to an older drug methadone use.

Buprenorphine and methadone use

Buprenorphine and methadone are the two main and most effective agents used in the treatment of opioid dependence.⁷ In the UK and many other Western countries, both methadone and buprenorphine are recommended by the relevant institutions for treatment of heroin for detoxification.⁵ Before the mid-2000s, codeine tablets were the most commonly used agents in the UK.⁸ Methadone treatment was the most widely used agent especially in the USA. Despite its success in the treatment of addiction, over the years, as addictions for methadone increased, further searches came up. In response to the increased risk of abuse and addiction of methadone, the British pharmaceutical company Reckitt Benckiser launched Suboxone (buprenorphine/naloxone) in 2002.⁶ This drug, a combination of buprenorphine and naloxone, has been declared as a possible alternative to methadone. As a partial opioid agonist (compared to the full agonist Methadone), scientists have argued that Suboxone would offer the same benefits as methadone to individuals with no high potential

for abuse.⁵ The preliminary results were exciting and medical professionals and addiction experts around the world have always wondered if Suboxone is as effective as Methadone without the risk of abuse. Today, Methadone and Buprenorphine are the primary pharmacotherapy option in the treatment of heroin addiction withdrawal as well as replacement maintenance therapy in the UK, USA, Australia and some Western European countries.⁵

Comparison of buprenorphine and methadone

Methadone as a full agonist has no peak effect and produces more intense withdrawal symptoms than buprenorphine. However, methadone is more effective in severe addicts than buprenorphine. Since overdose of methadone is more risky compared to buprenorphine, the advantages of oral liquid form of methadone has no injectable abuse.^{5,9} Furthermore, methadone is less expensive than buprenorphine.¹⁰

In studies, buprenorphine given in flexible doses was found to be significantly less effective than methadone in retaining treated patients (relative risk=0.8), but in some studies it was found to be equivalent in suppressing heroin use. However, it was also found that low-dose methadone retained more patients than low- or medium-dose buprenorphine. Medium-dose buprenorphine has no advantage over medium-dose methadone in retention and has been found to be less effective in suppressing illegal opioid use.^{11,12}

Table 1. Metadone and buprenorphine comparison

Characteristics	Methadone	Buprenorphine	Advantageous
Usage place	Clinic use	Office and home use	Buprenorphine
Withdrawal symptoms	Totally eliminates	Strongly eliminates	Both
Sense of elevation	Creates	No	Buprenorphine
Treatment of severe addiction	Very successfull	Sometime success	Methadone
Usage type	Oral fluid	Sublingual	Both
Effect on other opiates	Stops the effect of other opioids	Start withdrawal symptoms	Methadone
Psychological counseling	Provides psychological support	Provides psychological supp.	Both
Price	Cheap	Expensive	Methadone
Scientific	Proven fort the last 60 years	Proven fort the last 20 years	Both
High dosage	More risk	Less risk	Buprenorphine
Liver side affects	Lower	More	Methadone
Addiction severity	High	Low	Buprenorphine
Stopping long-term treatment	Difficult	Relatively difficult	Buprenorphine
Success in treatment	Similar proportions	Similar proportions	Both
Side affects	Slightly in the first week	Continues during use	Metadone

DISCUSSION

Despite the obvious benefits and advantages of buprenorphine in terms of pharmacotherapy (for example, a significant reduction in the risk of overdose), buprenorphine did not exceed methadone in the treatment of opioid dependence. Some addicts use buprenorphine and others use methadone. There are addicts, both of them are effective. This is due to the fact that different patient types and their degree of dependence may affect treatment preferences. The main purpose here; to increase patient's motivation for change. Cognitive and behavioral change is very important in the treatment of addiction.¹³ Therefore, according to different patient types, both buprenorphine and methadone use may create different alternatives for treatment. Buprenorphine can be used in mild and moderate dependent patients and methadone option can be used in severe addicts.

Buprenorphine can be used more safely than methadone, whereas methadone may be preferred in patients with severe addiction and severe withdrawal crises. Increasing these treatment options increases the applications of addicts. Both drugs seem to be life-saving. In fact, the different advantages and weaknesses of these agents should not be seen as substituting agents. On the contrary, both agents should be evaluated in terms of the wealth of treatment in different patient groups, depending on the preference of the specialist and the patient's condition. This creates a wider range of treatments for the more dependent patients. In some countries like TRNC and Turkey, buprenorphine to be fitted as a single drug option, but the lack of methadone use permit is a serious shortcoming. Therefore, it is the scientific fact of today that both agents should be made available to physicians all over the world.

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