

Methadone Detoxification versus Traditional Gradual Decrease in the Consumed Amount of Refined Opium Dross (Shireh): The Preferred Method for Controlling Withdrawal Syndrome

Mohammadreza Farsinejad,¹ Hossein Sanaei-Zadeh*¹

Received: 02.06.2012

Accepted: 11.06.2012

ABSTRACT

Background: The aim of this study was to compare the effectiveness of methadone detoxification with traditional method of gradual decrement in the abused amount of the refined opium dross (Shireh) to control withdrawal syndrome in Shireh-addicted patients.

Methods: In this study, two groups of Shireh addicts were compared. The first group was treated by methadone and the second group by gradual decrement in the amount of consumed Shireh. Those experiencing the adverse effects of the treatment were excluded from the study.

Methadone dose was calculated based on the amount of the Shireh consumed and detoxification was performed during a 21-day period. In the second group, the amount of the consumed Shireh was gradually decreased within 21 days and some of the withdrawal symptoms were selected as indicators for patient evaluation.

Results: A total of 35 patients (16 versus 19 patients in the first and second groups) were evaluated. Their mean age was 43 ± 4 years and all were male. A statistically significant difference was found between these two groups in terms of severity and duration of withdrawal symptoms within the first five days and their duration after the 21st day of the onset of detoxification ($P < 0.05$).

Conclusion: In comparison with methadone detoxification, traditional method of gradually decreasing the consumed amount of Shireh controls the severity and duration of withdrawal symptoms better in the course of detoxification.

Keywords: Detoxification, methadone, refined opium dross, Shireh addict, withdrawal syndrome.

IJT 2012; 638-641

INTRODUCTION

Substance abuse is known to be a public and social health problem of the present century. Addiction leads to severe and profound physical and psychological injuries as well as social problems including divorce, crime, and unemployment (1). Opioid dependence is a cluster of physiological, behavioral, and cognitive symptoms indicating repeated and continuing abuse of opioid drugs despite significant problems due to such an abuse. Mu receptors are involved in the

regulation and mediation of analgesia, respiratory depression, constipation, and dependence (1-3).

Symptoms of opioid withdrawal appear when a person using opioids for a long time, abruptly stops its use, as it functionally occurs with the administration of an opioid antagonist. Long-term consumption of opioids results in changes in the number and sensitivity of opioid receptors such as increased sensitivity of the dopaminergic, cholinergic, and serotonergic neurons; however, it seems that the effect of opioids on noradrenergic

1. Department of Forensic Medicine and Toxicology, Tehran University of Medical Sciences, Tehran, Iran

*Corresponding author: Email: h-sanaiezadeh@tums.ac.ir

neurons is the primary cause of the symptoms of opioid withdrawal (2-3). Opium, opium dross, refined opium dross (Shireh), crack, and heroin are the opioids commonly abused in Iran (4-7). The withdrawal symptoms of these opioids include fever, insomnia, yawning, diarrhea, runny eyes and nose, piloerection, nausea and/or vomiting, muscle ache and etc. (1). Shireh is orally abused or inhaled and it is usually made of boiling opium dross (left in pipes after smoking opium) or a mixture of opium and opium dross with water, filtering the mixture several times, and, then, evaporating the filtrate until a gummy consistency is achieved (7- 8). Withdrawal syndrome associated with Shireh is more severe than opium itself since morphine alkaloids are more concentrated in Shireh (1, 6). Methadone and buprenorphine are some forms of opioid replacement drugs that reduce and/or eliminate the abuse of illicit opiates (1, 3, 9).

In this study, we compared the effectiveness of methadone detoxification with traditional method of gradual decrement in the amount of Shireh to control withdrawal syndrome in Shireh-addicted patients.

MATERIALS AND METHODS

Two groups of Shireh addicts were compared in an outpatient clinic for treating addicted patients. They were assigned to one of these two groups according to their own will: The first group was treated by methadone and the second group by gradual decrement in the amount of consumed Shireh. Information including the types of detoxification and drugs that are commonly used for treatment and the advantages and disadvantages of each therapy were explained to all patients. Written consent forms were then obtained from all of the participants and those experiencing adverse effects of the treatment were excluded from the study. Our study was approved by the Regional Ethics Committee. In the first group, methadone dose was calculated based on

the amount of Shireh consumed and detoxification was performed during a 21-day period (1, 10). In the second group, the amount of the consumed Shireh was gradually decreased within 21 days and some of the withdrawal symptoms, including yawning, insomnia, diarrhea, and nausea/vomiting, were selected as indicators for patient evaluation. Scoring the severity of these symptoms is defined in Table 1. Statistical analysis was performed by descriptive statistics, Pearson's Chi-square, and Student's t-test using SPSS software (version 17, Chicago, Ill, USA). P-values less than 0.05 were considered to be statistically significant.

Table 1. Severity of withdrawal symptoms

	Mild	Moderate	Severe
Diarrhea	1	2-3	>3 times
Nausea or vomiting	1	2-3	>3 times
Yawning	3	4-7	>7 times
Insomnia	> 6 hours	3-6 hours	>3 hours

RESULTS

A total of 35 patients (16 versus 19 patients in the first and second groups, respectively) met the inclusion criteria and were enrolled in the study. All were men with a mean age of 43 ± 4 years and average period of addiction of 7 ± 1.5 years.

In the first group, 94% of the patients had severe withdrawal symptoms and 6% developed moderate symptoms within the first 5 days of detoxification. Between the 6th and 21st days, 71% of the patients in this group showed mild withdrawal symptoms and 29% experienced moderate symptoms. After methadone consumption was completely discontinued (on the 21st day and afterwards), 87% of the patients had mild withdrawal symptoms for up to 5 ± 2 days. In contrast, in the second group, during the five days of detoxification, 83% of the patients experienced moderate, 11% had severe, and 6% had mild withdrawal symptoms. Mild and moderate withdrawal

symptoms were noted in 69% and 31% of the patients of the second group between the 6th and 21st days, respectively. After the complete cessation of Shireh consumption (day 21 and after), 93% of the patients had mild withdrawal symptoms for up to 2 ± 1 days (Table 2). Vomiting was not reported in this group. A statistically significant difference was found between these two groups in terms of severity and duration of withdrawal symptoms within the first five days and regarding their duration after the 21st day of the initiation of detoxification ($P < 0.05$).

Table 2. Severity of withdrawal symptoms in days of detoxification period

	1-5 days	6-21 days	after 21 days
First group (n=16)	94% severe 6% moderate 0% mild	0% severe 29% moderate 71% mild	87% mild 5±2 (day)
Second group (n=19)	11% severe 83% moderate 6% mild	0% severe 31% moderate 69% mild	93% mild 1±2(day)

DISCUSSION

Based on the findings of this study, within the first 5-day period of detoxification, withdrawal symptoms in the second group were less severe and shorter in comparison with the first group. It has been shown that during the first days of methadone detoxification, there is no balance between blood levels and the dosage of methadone (1, 9, 11-12). Thus, it seems that with this mechanism the withdrawal symptoms were more severe in the first group with this mechanism. In addition, when methadone therapy is gradually discontinued, blood level gradually decreases within 24-48 hours. During the first 24 hours after the last consumption, blood level of methadone halves and after 48 hours, it decreases to 25% of the peak levels (1, 11-14). This

observation is in accordance with our results showing that there were no differences between the two groups in the last period of detoxification (after the day 21) in terms of severity of the withdrawal symptoms; however, the symptoms last up to 5 days due to the long half-life of methadone.

CONCLUSION

In comparison with methadone detoxification, traditional method of gradually decreasing the consumed amount of Shireh controls the severity and duration of withdrawal symptoms better in the course of detoxification.

ACKNOWLEDGEMENT

The authors would like to thank Dr. Nasim Zamani for editing the manuscript.

REFERENCES

1. Krambeer LL, von McKnelly Jr W, Gabrielli Jr WF, Penick EC. Methadone therapy for opioid dependence. *Am Fam Physician*. 2001;63(12):2404-10.
2. Jafe JH. Opioid- related disorders. In: Sadock BJJ, Sadock VA, editors. *Synopsis of psychiatry*. Lippincot Williams & Wilkins; 2007.p.445.
3. Jittiwutikarn J, Ali R, White JM, Bochner F, Somogyi AA, Foster DJR. Comparison of tincture of opium and methadone to control opioid withdrawal in a Thai treatment centre. *Br J Clin Pharmacol* 2004;58(5):536-41.
4. Noohi S, Azar M, Behzadi AH, Sedaghati M, Panahi SA, Dehghan N, et al. A Comparative Study of Characteristics and Risky Behaviors Among the Iranian Opium and Opium Dross Addicts. *J Addict Med*. 2011;5(1):74-8.
5. Zamani N, Sanaei-Zadeh H, Mostafazadeh B. Hallmarks of opium poisoning in infants and toddlers. *Trop Doct*. 2010;40(4):220-2.
6. Khademi H, Malekzadeh R, Pourshams A, Jafari E, Salahi R, Semnani S, et al. Opium use and mortality in Golestan Cohort Study: prospective cohort study of 50 000 adults in Iran. *BMJ* 2012; 344:e2502.

7. Nasrollahzadeh D, Kamangar F, Aghcheli K, Sotoudeh M, Islami F, Abnet CC, et al. Opium, tobacco, and alcohol use in relation to oesophageal squamous cell carcinoma in a high-risk area of Iran. *Br J Cancer*. 2008;98(11):1857-63.
8. Hoyer T, Rose E, Ghadirian P, Castegnaro M, Malaveille C, Bartsch H, Day N. Ingested mutagens from opium and tobacco pyrolysis products and cancer of the oesophagus. *Lancet*. 1978;2(8088):494-6.
9. Dyer KR, White JM. Patterns of symptom complaints in methadone maintenance patients. *Addiction*. 1997;92(11):1445-55.
10. Anderson IB, Kearney TE. Medicine Cabinet: Use of methadone. *West J Med*. 2000;172(1):43-6.
11. Foster DJR, Somogyi AA, Dyer KR, White JM, Bochner F. Steady-state pharmacokinetics of (R)- and (S)-methadone in methadone maintenance patients. *Br J Clin Pharmacol*. 2000;50(5):427-40.
12. Mitchell TB, White JM, Somogyi AA, Bochner F. Comparative pharmacodynamics and pharmacokinetics of methadone and slow-release oral morphine for maintenance treatment of opioid dependence. *Drug Alcohol Depend*. 2003;72(1):85-94.
13. Dyer KR, Foster DJR, White JM, Somogyi AA, Menelaou A, Bochner F. Steady-state pharmacokinetics and pharmacodynamics in methadone maintenance patients: Comparison of those who do and do not experience withdrawal and concentration-effect relationships. *Clin Pharmacol Ther*. 1999;65(6):685-94.
14. Hiltunen A, Martel J, Ottosson EC, Borg S, Lafolie P, Boreus L, et al. Subjective and objective symptoms in relation to plasma methadone concentration in methadone patients. *Psychopharmacol*. 1995;118(2):122-6.