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## **Methadone toxicity in a poisoning referral center**

Seyed Jafar Navabi,<sup>1</sup> Amir Arsalan Iranmanesh,\*<sup>2</sup> Seyed Mohammad Navabi,<sup>3</sup> Arash Iranmanesh,<sup>4</sup> Abbas Aghaei,<sup>5</sup> Amir Hossein Iranmanesh<sup>6</sup>

<sup>1</sup>Assistant Professor of Internal Medicine in Imam Khomeini Hospital, Kermanshah University of Medical Science, Kermanshah, Iran  
jnavabi2000@yahoo.com

<sup>2</sup>Medical Intern in Kermanshah University of Medical Science, Kermanshah, Iran  
amirarsalan\_md@yahoo.com

<sup>3</sup>Student of Pharmacology in Kermanshah University of Medical Science, Kermanshah, Iran  
Sn2000@yahoo.com

<sup>4</sup>General Physician in Al Zahra Heart Hospital, Shiraz University of Medical Science, Shiraz, Iran  
iranmanesharash@yahoo.com

<sup>5</sup>PHD Student of Epidemiology in **Clinical Research and Development Department of Imam Khomeini Hospital, Kermanshah University of Medical Science, Kermanshah, Iran**  
aqaei.a@gmail.com

<sup>6</sup>Manager of Planning and Project Control Department of Ofogh Consulting Engineers, Bushehr, Iran  
amir9002@gmail.com

\*Corresponding author's E-mail: amirarsalan\_md@yahoo.com

### **Abstract**

Objective: Methadone poisoning can occur accidentally among addicts or member of their families or intentionally for suicide. The aim of this study was to evaluate the epidemiological and clinical manifestations of Methadone poisoning. Methods: A descriptive analytical study was performed from 2013 to 2014 in the poisoning emergency and clinical toxicology departments of Imam Khomeini hospital affiliated with Kermanshah University of Medical Sciences (Kermanshah, Iran). All patients with Methadone poisoning within this period of time were investigated. Different variables were recorded in a checklist. Findings: A total of 199 patients were studied. Most of the patients were males 62.8% and the rest were females 37.2%. Mean  $\pm$  standard deviation of the age was  $33.86 \pm 13/33$  years (range: 18-85). The mean interval between Methadone ingestion and the first medical care was 5.6 h with

median of 4h with the range of 0/5-24h.101 patients (50.8%) were narcotic addicts. Intentional poisoning was observed in 56 patients (28.1%).Accidental poisoning was observed in 42 patients (21.1%).183 patients (93%) consumed syrup of Methadone. Besides low level of consciousness, apnea, meiosis, and nausea and vomiting which are observed as the most common symptoms of methadone poisoning and also are common symptoms among poisoning with other opiates, we focused on other acute and more serious complications of methadone poisoning. 99 patients (49.7%) had hypotension,79 patients (39.7%) had aspiration pneumonia, 35 patients (17.6%) had rhabdomyolysis,23 patients (11.6%) had acute kidney failure, 14 patients (7%) were in hypoglycemic condition .11 patients (5.5%) were in deep coma, 9 patients (4.5%) had cardiac arrest, 6 patients (3%) had seizure, 3 patients (1.5%) had acute liver failure, 1 patient (.5%) had anoxic encephalopathy,1 patient had (.5%) disseminated intravascular coagulation and finally 1 patient (.5%) died because of Methadone poisoning. Mean length of hospital stay was 2.46 d (range: 1-17 d, median: 2 d). Conclusion: Addiction, attempt to suicide, accidental poisoning, age, gender, delayed hospital presentation, acute toxicity in patients who were on daily dose of Methadone (acute on chronic toxicity) were of the most important factors effective in Methadone poisoning, which should be considered in the public training and prevention of poisoning. Rhabdomyolysis can be considered as a great risk factor for genesis of acute kidney failure in patients with Methadone poisoning. **Keywords: Methadone, complications, poisoning, toxicity**

### Introduction

Neurobiological evidence and medical experiences show that opium dependence is a common problem. Agonist maintenance therapy is one of the present therapies for opioid dependency. One of these opioid agonists used to treat addiction is Methadone. Despite the effectiveness of this agonist, comprehensive care facilities for the people under this treatment are not still enough. Although Methadone is not a new medicine, its use to reduce pain and treat addiction has increased rapidly. Pharmacological characteristics of Methadone indicate lethal and dangerous effects of Methadone poisoning. Methadone poisoning can occur accidentally (resulting from overdose due to abuse of narcotic substance or accidentally by children or elderly) or intentionally for suicide. Methadone poisoning is a common poisoning observed in poisoning emergency and clinical toxicology department of Imam Khomeini hospital (Kermanshah, Iran). This may be due to the large number of addicted patients under Methadone maintenance therapy (MMT) protocol and also Methadone availability to other family members. Pharmacy companies usually prepare Methadone for the purpose of MMT as a solution with a fruit taste. In this way, the good taste of Methadone makes it attractive for the children. Because of easily availability of Methadone in our country, and increasing MMT centers for addicted patients, there is a need for epidemiological study on this poisoning to improve both the quality of care and imposing better program on prevention methods. Therefore, the epidemiological and clinical manifestations of Methadone poisoning in the mentioned hospital have been investigated.

### Methods

A descriptive analytical study was performed from 2013 to 2014 in the poisoning referral center of Imam Khomeini hospital, Kermanshah, Iran. All patients poisoned with Methadone who was hospitalized in the poisoning ward and intensive care unit during the above mentioned period were investigated. Patients who consumed