

## Opium and Opioid Abuse in Orthopedic Inpatients: A Cross Sectional Study in Urmia University of Medical Sciences

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**Abstract-** During a cross-sectional study, patients who were admitted to the orthopedic department of the Urmia University of Medical Sciences were asked about opium/opioid abuse. Demographic characteristics, the pattern of consumption, the substance, the duration of the use, the duration of hospital stay and the cause of their injuries were recorded. Among 2,867 patients, 74 (2.5%) patients (71 men and 3 women) with the mean age of 38 were opium/opioid users. Most of the patients used opium through inhalation. The mean duration of the substance use was 7.4 years. The mean duration of hospital stay between the regular orthopedic patients and the opium/opioid abuser orthopedic patients was statistically significant ( $P=000$ ). Among four Hepatitis C Virus (HCV) infected patients, three subjects were injection users and Human Immunodeficiency Virus (HIV) also infected two of them. Road traffic accidents (37.8%), and work related injuries (17.5%) were the two most common reasons for the patient's injuries.

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### Introduction

Opium/opioid use may complicate the health problems of the medical patients (1-3). Opium alters some of the biochemical parameters of human's serum. (4) In an opium/opioid abused patient, peri-operative pain management is difficult. Most opium/ opioid users have a high tolerance for opiate analgesics and will require higher and more frequent doses to achieve desired effects than the ordinary patients; these patients usually are under medicated for pain (5). The duration of spinal anesthesia is shorter in opium abusers than non-abusers (6).

Intravenous access may be difficult in injection drug users because of phlebitis. Injection drug users are at increased risk of thrombophlebitis, infection at the injecting site, bacteremia and sepsis (5,7). Injection drug use along with the chance of transmission of infectious diseases including Human Immunodeficiency Virus (HIV) and Hepatitis C Virus (HCV) complicates the patient's health problems (5,7). Other concerns for patients revolves around medication error, increased risk

of infection (5,7), withdrawal syndrome, the risk of violent behavior and psychological problems (3), and the lack of post operative cooperation. Opium/opioid abuse carries substantial risks of harm to health and social functioning (8). The patient may leave the hospital against medical advice (5).

The above mentioned problems might be seen in the orthopedic patients who abuse opium or opioids. This study presents a look at the epidemiology of the opium/opioid abuse problem in the patients who were admitted to the orthopedic department of the Urmia University of Medical Sciences, Urmia, Iran.

### Materials and Methods

This survey was a cross-sectional study. The study period was one year from 20 February 2008 to 20 February 2009. The survey was conducted at the orthopedic department of Imam Khomeini Hospital. The hospital is a tertiary referral care center, affiliated to Urmia University of Medical Sciences in West Azarbaijan province in Iran. The study population was

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adult patients, aged 18 and over, who needed orthopedic care for various reasons.

Opium/opioids abuse is defined as the use of the substance without a medical prescription. However opioids may be prescribed for orthopedic patients to relief pain. The opioids include heroin, morphine, methadone, and other alkaloid extracts of opium. While obtaining regular medical history of patients by an intern, patients were asked about any opium or opioids abuse. If the patients declared any abuse, they would be interviewed voluntarily by the intern and the data would be recorded. Because of the social stigma some patients might not initially disclose their abuse habits but during a hospital stay they would reveal it out of necessity. These patients were also interviewed voluntarily.

The following information was recorded: age, sex, the pattern of drug abuse (inhalation, ingestion, and injection), the substance, the duration of the use, cigarette smoking, the cause of their injuries (road traffic accident, fighting, falling down, self inflicted injuries, work related injuries and/or other causes), and the duration of hospital stay. The patient's serum samples were investigated for HIV, HCV, and Hepatitis B virus.

The data of the subjects were available for analysis by recording on a master sheet.

The Urmia Faculty of Medicine review board approved the study. The data is registered confidentially. Exact fisher's test and nonparametric t-test (Mann-Whitney) were used as statistical methods for comparison qualitative and quantitative variables in two groups.

## Results

During the study period, 2867 (2087 men and 780 women) patients, aged 18 and over, were admitted to the orthopedic department because of various reasons. Seventy four (2.5 %) patients (71 men and 3 women) with the mean age of 38 (20 to 86 years old) declared their opium/opioids abuse. All of them were current users at the time of admission. The mean duration of their substance use was 7.4 years (1 to 45 years).

Among men the rate of opium/opioids abuse was 3.25 %, and among women the rate of opium/opioids abuse was 0.39%. Comparison between the men's and women's opium/opioids abuse rates was statistically significant ( $P=0.00$ ).

Fifty-five (74 %) patients used the substance through inhalation, 24 (32 %) through ingestion, and 3 (4 %) through injection. Some of the subjects used opium/opioids through different routes concurrently (Figure 1).



**Figure 1.** Pattern of the opium/ opioid abuse in 74 patients. Some patients used different routes concurrently.

Seventy (95%) of 74 patients had the habit of cigarette smoking which was statistically significant ( $P<0.05$ ).

Road traffic accidents (37.8%) and work related injuries (17.5%) were the two most common reasons for the patient's injuries. Six (8%) patients had nerve and tendon injuries due to self-cutting (Table 1).

There were four HCV infected patients. Among HCV infected patients, three subjects were injection users. Two of injection users were also infected by HIV and one of them was unaware of it prior to admission.

During the study period the mean duration of hospital stay of the regular orthopedic patients was  $3.5 \pm 0.5$  days. The mean duration of hospital stay of the opium/opioid abuser orthopedic patients was  $7.3 \pm 1.3$  days. Comparison between the mean duration of hospital stay between the regular orthopedic patients and the opium/opioid abuser orthopedic patients was statistically significant ( $P=0.00$ ).

## Discussion

A major problem in evaluating the opim/opioid abuse arises from rough and indirect estimation of the substance users (2). The advantage of our study is that we believe our data collection is reliable. The patients admitted to the orthopedic department needed orthopedic care and there was no selection in the patient's admission. Usually patients do not hide their habits and as they are not legally prosecuted in hospitals they usually voluntarily co-operate in giving information about their habits.

There are several Iranian studies which have presented the problem of opium abuse among in-patients of Shiraz (a city in Iran) hospitals (9-12). Ahmadi *et al.* (11) found the rate of 7.2% opium users among 600

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randomly selected patients who had been admitted to different wards in hospitals of Shiraz. Ahmadi and Benrazavi (9) in a cross sectional study, found 9.4% opium abusers and 5.2% opium dependent among 96 randomly selected cardiovascular patients admitted to different cardiac wards affiliated to Shiraz University of Medical Sciences. Ahmadi and Benrazavi (10) in another cross sectional study, found 9 (14.1%) opium abusers among 64 randomly selected nephrologic patients who were admitted in the wards affiliated to Shiraz University of Medical Sciences. Tabei *et al.* (12) found 10 (5.7%) opioid dependent patients out of 177 gastric cancer patients aged 24 and older in a hospital survey in Shiraz. We were unable to find a similar study in orthopedic patients. In comparison to above studies (9-12) the rate of abuse in the current study is lower. The figures in this study belong to patients who are current users. The reason for narcotic abuse may be release of tension, habit, enjoyment and need (9-11). Since addiction has a social stigma, there may be some cases of opium/opioids users who had used it before, or used it just for enjoyment that did not disclose their habits for our study.

The pattern, profile and the epidemiology of narcotics and substance use vary in different societies (3). In our study the rate of the substance abuse in women (0.39%) is far less than men (3.25%). Therefore, pooling the rate of the substance abuse of the men and women together results in a dilution effect on the total rate of the substance abuse among patients. It seems that the rates of the substance abuse between men and women should be considered separately. In accordance with other Iranian studies, this study also shows that men are at greater risk of opium/opioids abuse and the most used substance was opium (2,9,12). It seems that cultural attitudes may have influence on the type of substance used (11).

HCV infection is the most common chronic viral infection among injection drug users (7). Simonian *et al.* (13) found that tattoo and intravenous drug abuser have the highest correlation with a HCV positive test. In our study three patients were injection users. They were infected by HCV and two of them infected by HIV. One of the HIV infected subjects was unaware of it prior to admission. The medical staff that have close contact with body liquids of the viral infected drug abusers are at high risk of the development of viral infections. The nature of orthopedic surgery presents special risks such as exposure to sharp bone edges and aerolised and scattered blood from instruments (14,15). It has been shown that there are viral particles including HIV and

hepatitis viruses in the electrocautery evaporations and smoke (14,15). Therefore, we advise all the patients with a history of injection substance use to be checked for viral infections that would be a significant public health issue.

Tobacco smoking that leads to chronic vascular disease and increased risk of ischemia and infection is highly prevalent among narcotic and substance users (7). In this survey, 70 (95%) of 74 patients had the habit of cigarette smoking.

In this survey we found that the mean duration of the hospital stay of substance users is longer than a regular orthopedic patient ( $P=0.00$ ). Therefore the costs of their orthopedic care are higher than an average orthopedic patient.

In our study, road traffic accidents and work related injuries were the main reasons of injuries. The probable associations of the substance abuse and road traffic accidents, and the substance abuse and injury at work place stimulate further researches.

Although the frequency of 2.5% opium/opioid abuser among orthopedic patients of this study does not reach statistical significance, the potential medical problems that may complicate the status of the orthopedic care make it necessary to pay attention to substance use.

Care must be taken to generalize the findings of this study to all orthopedic patients population. Familiarity with the epidemiology of the opium/opioid abuse in orthopedic patients may help to provide them with a better orthopedic care.

## Conflict of interest statement

This study conducted as a doctoral thesis (registered number 8/1- 86/10/2), Urmia University of Medical Sciences, Urmia, Iran. The research accomplished in orthopedic department, Imam Khomeini Hospital, Urmia.

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