



## **Comparison of General Well-being of Patients Undergoing Methadone Maintenance Therapy (MMT) with Patients Undergoing Naltrexone Therapy**

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### **Abstract**

**Background:** Drug abuse is a problem that causes a wide array of social, emotional, and physical problems and involves both patients and the society. Helping the addicted has always been a priority for physicians and especially psychiatrists. The purpose of this prospective study was to compare the effects of methadone and naltrexone in general well-being of patients undergoing these treatments.

**Methods:** Forty-six patients who were taking either methadone or naltrexone were selected and evaluated for a period of 5 months using a 28-item questionnaire about their general health.

**Results:** In spite of the fact that patients undergoing methadone treatment had more severe symptoms and prognoses regarding their age, duration of drug abuse, and number of treatment attempts, these patients showed better general health and social functioning comparing to patients undergoing naltrexone treatment during the 6-month period of this study ( $P<0.000$ ).

**Conclusion:** Methadone might be regarded as an effective and useful medicine in treatment of addiction.

**Keywords:** Methadone, Naltrexone, Drug abuse, Health

### **Introduction**

Drug abuse is a problem that not only devastates people's lives, but also affects norms and values of the society. In 1989, UN reported that 49% of murders, 68% of physical aggressions leading to murder, 50% of traffic accident deaths, 20% to 35% of suicides, 52% of rapes, 62% of physical aggressions, 50% of spouse abuses, and 38% of child abuse reports are related to drug addiction (1). In Iran, the abundance and variety of drugs, different modes of drug abuse along with economic, societal, and cultural problems have made the treatment of the addicted and at risk people

more complicated. Therefore it is absolutely essential to apply best means and methods of treatment in order to help these patients (2).

Methadone is a long-lasting agonist which is taken orally and acts on  $\mu$  opioid receptors (3). It was synthesized at the end of WWII first as an alternative painkiller for morphine (4). Methadone was used as a detoxifier of heroin and other opioids from late 1940s and as a maintenance medicine from mid-1960s (4). Administration of methadone reduces the craving for heroin in addicted patients (5). In addition mood and physical changes asso-

ciated with lack of heroin or other opioids with short half-time are not seen in methadone treatment (6). Methadone was approved as an addiction treatment medicine after clinical investigations showed its effectiveness in treatment of addiction and improvement of social functioning (4). During last three decades, a great deal of research has shown that methadone is an effective medicine in treatment of addiction (6). Controversies, however, still exist in using methadone, especially some ethical concerns regarding the issue (7). Naltrexone is an oral antagonist that acts on opioid receptors and is administered along with cognitive behavioral therapies in treatment of addiction (4). Antagonists of opioids seem to reduce or eliminate the pleasure associated with drug abuse and therefore reduce the positive reinforcement associated with these drugs (8). The aim of study was to compare the effects of methadone and naltrexone in general well-being of patients undergoing these treatments

## Methods

In this prospective study, participants were selected randomly among those who entered in the treatment programs of Imam Khomeini Hospital of Ahwaz, Iran (2010-2011). Patients were first detoxified using a number of methods. After one month naltrexone treatment began and the physical symptoms of patients such as pain and agitation were recorded. This group of patients continued naltrexone treatment and clonazepam 1mg. was prescribed whenever they demonstrated lack of sleep. There were 23 patients participating in this study group. At the same time 23 patients were selected for methadone treatment using the same selection methods. The latter group entered the study after their physical symptoms and dose of methadone stabilized. The total number of 46 patients participated in this study and their general health were investigated for a period of six months using General Health Questionnaire (GHQ) (9).

T-Test was used to interpret quantitative data resulted from the study and in order to analyze the qualitative data  $\chi^2$  test was used. All the test re-

sults were considered statistically significant at the rate of  $P < 0.05$ . Quantitative data were demonstrated as Mean  $\pm$  SD and qualitative data were demonstrated as percentages.

The study was approved by Ethics Committee of Jundishapur University of Medical Sciences, Ahwaz, Iran.

## Tools

A General Health Questionnaire (GHQ 28-item) (9) was used which is a general health survey tool. This questionnaire is also used to compare general health of a population of psychiatric patients over a period of time (10). In this study the 28-item version of the questionnaire was used and in addition to the total score, the rate of social malfunctioning between the two groups was studied. The results of previous studies that used this questionnaire prove validity and reliability of it in Iran (10). The GHQ-28 has been divided into four subscales. These are: somatic symptoms (item 1-7), anxiety/insomnia (items 8-14); social dysfunction (items 15-21), and severe depression (item 22-28) (9).

## Results

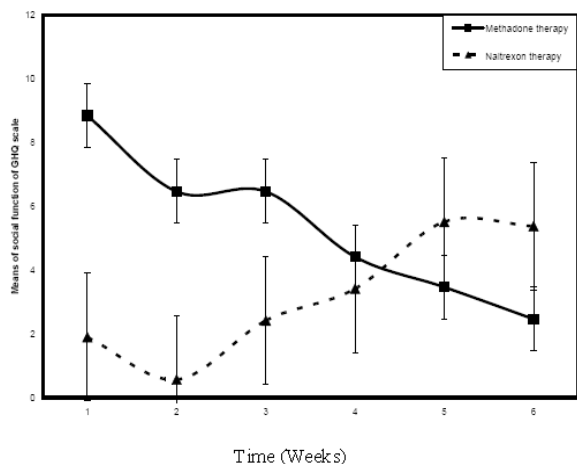
### Demographic data

All participants were male. Participants undergoing methadone maintenance therapy (MMT) had higher age mean than naltrexone group ( $P < 0.001$ ). Methadone group had also more treatment attempts and drug reuse ( $P < 0.001$ ). There was no statistically significant difference between the two groups regarding marital status. One patient from methadone group and two patients from naltrexone group left the study due to their return to drug abuse which did not statistically affect the results of the study.

### The Mean of changes in GHQ results between the two groups

The mean score of GHQ in patients undergoing naltrexone treatment was significantly lower than the other group ( $P < 0.001$ ). During the study the mean score of GHQ in methadone patients reduced gradually so that at the end of fourth month this difference was not significant ( $P = 0.39$ )

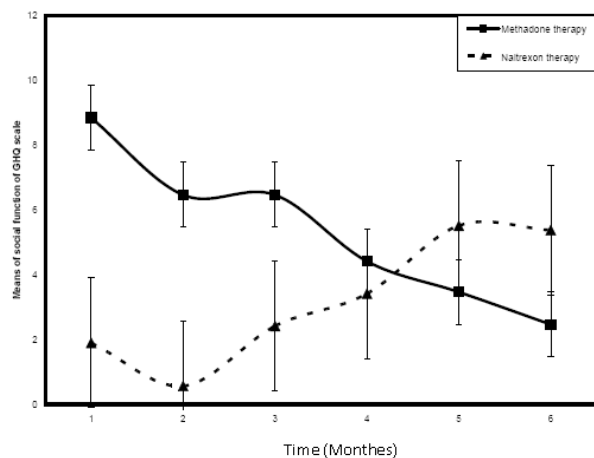
and at the end of six month the mean score of GHQ in methadone group was lower ( $P<0.001$ ) than naltrexone group (Fig.1).



**Fig. 1:** The mean of reduction in GHQ score in general well-being

#### *The mean score of social functioning*

The mean score of social functioning in patients undergoing naltrexone treatment was significantly lower than methadone group ( $P<0.001$ ). During the study the mean scores of social functioning in methadone patients reduced gradually so that at the end of third and fourth months this score was not significantly different between the two groups. At the end of fifth month this score was significantly lower ( $P<0.001$ ) in methadone patients (Fig. 2).



**Fig. 2:** The mean of social functioning score in GHQ

## Discussion

In this study we investigated the effects of methadone maintenance therapy (MMT) and naltrexone maintenance therapy (NMT) on general health and social functioning of patients undergoing rehabilitation. The results of this study indicated that MMT can improve general health and social functioning of patients suffering from addiction. This improvement is higher in MMT patients comparing to NMT patients. These findings are in accordance with other similar studies. Dole and Nyswander reported that oral use of methadone reduces craving for heroin (11). Fixed doses of methadone reduce mood changes, physical symptoms, and craving for drugs gradually (12). These patients also do not experience euphoria or sedation associated with drug abuse. These patients act normally in completing the tests that require vigilance and concentration (5, 11).

The results of this study showed that in NMT patient's general health and social functioning decreases gradually whereas in MMT patients these areas improve during time. NMT patients considered craving for drugs as their major problem (76%) while the results of previous studies indicate reduced craving for drugs as one of the therapeutic effects of naltrexone (4)(13).

If patients have enough motivation to take naltrexone, this medicine can be an effective alternative for methadone (4, 12). Our study showed that despite all the patients had high motivation to undergo NMT, their general health status and social functioning deteriorated due to their impulses and cravings for drugs. There was a risk that if the study lasted for more than the scheduled time, more patients would withdraw from the naltrexone group.

At the beginning of this study patients undergoing NMT had a better status than MMT group regarding their age and number of treatment attempts, however, their progress rate was slower than the MMT group.

The findings of this study should be evaluated considering its limitations. A study conducted

with higher number of participants and longer study period may result in more accurate data.

## Conclusion

MMT is an effective treatment if it is administered properly and accompanied by patient and family education. Another advantage of MMT is that it imposes less financial burden than NMT or drugs on families.

## Ethical considerations

Ethical issues (Including plagiarism, Informed Consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc) have been completely observed by the authors.

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