Bupropion in Methadone Induced Erectile Dysfunction

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Abstract: Background: Use of opioids is associated with hypoactive sexual desire, erectile and orgasmic dysfunction. 16-30% of patients in methadone-maintained Therapy (MMT) may develop erectile dysfunction (ED). **Objective:** To evaluate the efficacy of Bupropion (an antidepressant which can improve sexual function) in treatment of Methadone induced sexual dysfunction. **Method:** Patients recruited from 3 Methadone clinic in Kermanshah underwent a structured clinical interview according to DSM-IV-TR. Erectile function was assessed using erectile dysfunction intensity scale. From the 72 subjects, 67 suffered from ED. The subjects were informed about the study and then, 67 patients voluntarily received 100mg of Bupropion for six weeks. 52 patients who completed the treatment course were assessed by ED questionnaire at the end of the study. Statistical analysis was performed using SPSS-16 software. **Results:** The prevalence of ED was 93.0% in our sample. The mean erectile dysfunction (ED) intensity scale was 12.79, and 15.94 before and after the treatment course respectively (P=0.03). ED severity had no significant relation with age and type of substance dependency (P=0.09); but it had a significant relation with duration and dosage of Methadone therapy ($p<0.05$). No major side effects were observed in our sample durig treatment course. This trial is registered with the Iranian Clinical Trials Registry (IRCT138905124501N1; www.irct.ir). **Conclusion:** We find that Bupropion may be effective in the treatment of methadone induced ED. Further studies with control group and greater sample size are warranted to evaluate the efficacy of this medication in Methadone Induced Erectile Dysfunction.

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Introduction

Previous studies reported the prevalence and types of sexual dysfunction in men on methadone maintenance for opioid dependence, and describe factors which may contribute to sexual dysfunction. While erectile dysfunction(ED) is not life threatening, it may result in withdrawal from sexual intimacy and reduced quality of life [1, 2, 3]. Estimates of the prevalence of ED in methadone-maintained patients vary widely: 16% [4], 23% (21/92) [5], 30% (8/27) [6].Many patients with ED fail to mention ED to clinicians and counselors [7] and many clinicians and counselors feel uncomfortable and embarrassed about dealing with sexual problems[8]. Nevertheless, the assessment of ED in these patients may be quite important.

Identification and management of ED can improve adherence to treatment, the effectiveness of which, as is well-known, is associated with high doses and long treatment duration [9].

There are various treatment options for ED, although men strongly prefer oral therapies [10]. Bupropion is a second generation antidepressant agent that blocks centrally the reuptake of noradrenaline and dopamine [11]. It is an oral antidepressant which is commonly used adjunctively to treat selective serotonine reuptake inhibitor induced sexual dysfunction and sexual dysfunction in non depressed patients and has a positive effect on sexual function [12, 13]. This agent also reported to be useful in improvement of orgasmic delay and inhibition, and possibly disorders of sexual arousal in

non depressed patients [14]. ED is an important side effect of Methadone therapy and to our knowledge only one prior study was done in treatment of this disorder. We conducted this study to evaluate the efficacy of this drug on methadone induced ED.

Materials and Method

One hundred thirty two patients were studied from May 2010 to January 2012. Three enters recruited patients every day, from 3 Methadone clinics of Kermanshah University of Medical Sciences (KUMS). The inclusion criteria were: being married male; 18 years of age or older; having a history of opium dependence; and having been on methadone treatment for at least 30 days. A physician visited all patients and whom with obvious organic illnesses (such as diabetics or patients with heart and vascular disease), patients under treatment with any other medications and those with history of ED before Methadone therapy was excluded. Written and signed informed consent was obtained from the participants. Participation in the study was voluntary and confidential. No remuneration was provided for participation. The Trial was approved by the Local Ethics Committee and is registered with the Iranian Clinical Trials Registry (IRCT138905124501N1; www.irct.ir).

A structured clinical interview according to DSM-IV-TR was administered by a psychiatrist for diagnosis of ED. The interview included questions on drug use and sexual behavior. Erectile function was a assessed using erectile dysfunction (ED) intensity scale [Total score: 5 to 10 (severe ED); 11 to 15 (moderate ED); 16 to 20 (mild ED); and 21 to 25 (no ED)] which was used by Tatari et al in Iran previously [15].The higher the score the lower the ED severity. After the interview, the patients completed the erectile dysfunction (ED) intensity scale. 72 subjects met the inclusion criteria; and of them, 67 suffered from ED. After being informed about the study, 67 patients voluntarily underwent treatment with 100mg of Bupropion for 6 weeks.15 patients dropped out because of irregular drug consumption. 52 patients who completed the treatment course were assessed by the erectile dysfunction (ED) intensity scale and by clinical interview again at the end of study. Statistical analysis was done, using SPSS-16 software. Associations between categorical risk factors and ED scores and changes in the mean erectile dysfunction (ED) intensity scale were tested by qi-square.

Results

The study included 72 males. 67 patients suffered from ED (93.0%) and went under treatment with Bupropion 100mg daily for 6 weeks treatment course. The subjects were 21–53 years old (mean age =36.2± 11.2 year). 15 patients dropped out, and discontinued treatment. The mean erectile dysfunction (ED) intensity scale increased from 12.79 to 15.94 in patients after the treatment course (P=0.03). No significant relation was found between age and ED. (P=0.07). History of substance dependency indicated 40.6% dependency to opium, 37.5% to heroin, and others showed poly substance dependency. No significant association was observed between type of substance dependency and ED. (P=0.09)

There was a significant association between duration of Methadone therapy and ED severity (P=0.01). Also relationship between daily Methadone dosage and ED severity was statistically significant (P=0.04). No major side effect was detected during treatment course in our participants. No major side effects were observed in our sample by using the 100mg dosage of Bupropion.

Discussion

According our study results 93.0% of patients under Methadone therapy suffered from ED which was congruent with the literature which reported high prevalence ED in these patients [4, 6, 7, 15,16]. Spring WD et al reported that sexual dysfunction among these patients may be due to coexisting psychiatric problems rather than caused by opiates [17].

We showed significant association between daily methadone dosage and severity of ED. Those patients who received higher methadone dosage showed a more severe ED, and this may be due to adverse effects of methadone which reported in previous study [15].

The association between duration of Methadone therapy and ED severity was also statistically significant. Those patients who were on Methadone therapy for a longer time, showed a more severe ED than others. Chen W et al reported significantly association between erectile function and duration of Methadone therapy. [18] No significant association between age and ED was seen in our study.

In this study, we found that Bupropion was effective in the treatment of ED in patients who are under Methadone therapy. Bupropion increased the mean ED intensity scale, and may improve this sexual dysfunction when induced by Methadone. Previous studies also showed the efficacy of Bupropion on sexual function in different samples [11-13]. One study reported efficacy of Trazodone in Methadone induced ED[15].

Our study had some limitations. First we do not have a placebo control group. Second our stdy

sample size was relatively small. Third our subjects were on short-term treatment period. Consequently the results should be interpreted with caution.

In summary, this study reports that Erectile dysfunction is likely to be an important problem for many males who are under Methadone therapy which needs assessment and treatment. Bupropion may be effective in the treatment of methadone induced ED. Further studies with greater sample size, and control group may determine the role of Bupropion in treatment of this disorder.

This trial is registered with the Iranian Clinical Trials Registry (IRCT138905124501N1; www.irct.ir).

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