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Review Article

Treatment of Methamphetamine Withdrawal with Methylphenidate and Modafinil

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Abstract

Background: Methamphetamine is globally abused. Like other addictions, methamphetamine abuse is a chronic relapsing disorder requiring for effective treatment and medications to promote the prevention of relapse. Methamphetamine use is accompanied with a state of well-being and also with increased wakefulness, physical activity, concentration and energy. Prolong use results to weight loss, aggression, memory deficits, poor impulse control, low concentration, severe dependency, unstable mood, hallucinations and delusions.

Conclusions: Some studies support the efficacy and safety of methylphenidate and modafinil in the treatment of methamphetamine withdrawal symptoms.

Keywords: *Methylphenidate; Modafinil; Methamphetamine withdrawal*

Introduction

In the industrialized and modern world, mainly developed countries, the rate of physical and mental diseases is going up therefore, policy makers, health decision makers and research workers have been paying out more consideration, care, concern, and currency to the treatment and direction [1-10] epidemiology, etiology, rate and prevention of mental disorders [11-31].

The most common cause of substance use disorders is psychiatric disease. A significant number of people self-medicate to decrease or improve their mental disorders such as irritability, anxiety, agitation, depression, mania, aggression, exhaustion, insomnia, impotency, and pain. Considering increasing level of mental problems globally, substance use disorders and substance related diseases, especially and mainly stimulants induced disorders have been considered as progressing dilemma [32-71]. At present, outpatient and inpatient referrals of psychiatric problems resulted from substance use and abuse are going up [72-110].

Use of methamphetamine produces a state of well-being accompanied with enhanced energy, wakefulness, and physical activity [1,111]. Repeatedly and extended use results to driven drug abuse, reduced weight, increased aggression, violence, memory deficits, poor impulse control, low concentration, prolonged health consequences, severe dependency, unstable mood and affect, delusions and hallucinations [112,113]. Methamphetamine is universally abused. In the United States, 18 million people over age 12 have experienced methamphetamine in their lives [112]. Similar to other addictions, methamphetamine abuse is a chronic relapsing disorder requiring for effective medications to promote the prevention of relapse.In Iran, in the past years, methamphetamine was illegally smuggled in from other countries mainly the West, but at the present time it is illegally synthesized and provided here in 'underground' laboratories. We should mention that the methamphetamine illegally synthesized in Iran is much more powerful and harmful and also is frequently associated with psychosis [114,115].

Following use of methamphetamine, cocaine andalcohol, dopamine discharged into the nucleus accumbens and prefrontal cortex strengthen alcohol, cocaine, and methamphetamine seeking behaviors [116-120].

Presently there is not any approved medication for the treatment of methamphetamine withdrawal symptoms. Although administration of methylphenidate and modafinil is for the treatment of ADHD and narcolepsy [1] however, we are prescribing them for the management and treatment of severe methamphetamine withdrawal craving; because we theorize that (our rationale) biochemistry involved in the use of modafinil, methamphetamine and methylphenidate is more or less the same (all of them raise the level of dopamine [114-123]. We suggest more research studies and clinical trials that demonstrates data collected from comparing of modafinil and methylphenidate in the treatment or reduction of methamphetamine withdrawal symptoms.

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