Bupropion for Amphetamine Withdrawal Syndrome

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Abstract

This study was a case report of an amphetamine abuser who came to see doctor because of amphetamine withdrawal syndrome three days after stopping prolonged use of amphetamine. The patient was treated him with a slow-release bupropion at the dose of 150 mg per day. After taking bupropion, his withdrawal symptoms i.e. dysphoric mood, fatigue, somnolence, and psychomotor retardation gradually disappeared within two to three days. Moreover, his craving for amphetamines was absent. The authors discussed the possible application for the clinical use for amphetamine abusers or dependence.

Key word : Bupropion, Amphetamine Withdrawal, Amphetamine, Withdrawal Syndrome

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The problem of amphetamine abuse is rising in Thailand. Amphetamine users are regarded as patients instead of outlaws, so, they are both forced and encouraged to seek treatment. In terms of biological treatment, only a few drugs have shown effectiveness in amphetamine withdrawal syndrome. Postdrug-use of anhedonia and dysphoria may be more important for users who have become dependent on the drugs for high energy or to help with the projecting their persona, and who may be temporarily unable to function without them.

There have been fewer studies on amphetamine withdrawal, but empirical data suggest that the symptoms are similar to cocaine withdrawal(1).

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The withdrawal syndrome includes fatigue, hypersomnia, psychomotor retardation which would make some patients return to taking amphetamines to abolish those symptoms.

Not much research has been done on effective drugs for amphetamine abuse. Amineptine was one that has proved its efficacy in clinical trials. Amineptine is effective for treating the major component of amphetamine withdrawal : a reversed vegetative syndrome (decreased energy and increased appetite and craving for sleep)[2] Unfortunately, owing to its abuse potential, Amineptine is no loger available in Thailand.

Lisuride is a dopamine agonist, reported to treat stimulant withdrawal by preventing reduction in locomotor activity and to increase the catalepsy produced by amphetamine withdrawal[3]. In treating the withdrawal syndrome in humans, lisuride significantly prolonged REM latency and reduced REM time, but other signs of withdrawal were not significantly improved in lisuride compared with patients treated with a placebo[4].

Bupropion is a trimethylated monocyclic phenylaminoketone that is an effective antidepressant with no sedating, anticholinergic, and cardiotoxic effect. Its mechanism of action may be related to dopamine, but remains uncertain at this time[5].

Bupropion has little effect or no effect on blood pressure, pulse rate, respiration, body temperature, pupil diameter, subjective appetite, and food intake. Despite its reinforcing properties, it is unlikely to give rise to such abuse[6].

In 1996, a slow release preparation became available for clinical use, and it was recognized as a safe and effective aid, in combination with a behavioral modification program, in smoking cessation treatment[7]. For the same reason as its mechanism of action, it was introduced to one of our patients with amphetamine abuse to find its benefit and disadvantages.

CASE REPORT

A 15-year-old school boy came to hospital with withdrawal symptoms from amphetamine. The patient had used amphetamines with his classmates for a year by smoking. Abusing amphetamines caused him to be expelled from school. Consequently, he was forced to come for treatment. At first he voluntarily refrained from taking amphetamines. Three days after that, he became very fatigued accompanied with somnolence, dysphoric mood, and psychomotor retardation. These symptoms forced him to see a doctor. After completing history and mental status examination, he was diagnosed as amphetamine withdrawal by DSM-IV criteria and a slow releasing form of Bupropion at 150 mg/day was prescribed. Two days later he reported feeling very much better. After 3 days of bupropion administration, his mood was elevated, his psychomotor was better and he reported that his condition was back to normal. The patient continued bupropion at the same dose for another week. At the second visit, he reported that he had no withdrawal syndrome or side effect of bupropion. He had no desire to take amphetamines and had gained confidence to cope with his substance abuse problem.

However, the patient asked to continue taking bupropion to see how it would help with supportive psychotherapy and family intervention. The patient continues to take bupropion at 150 mg/d and is still being followed-up.

DISCUSSION

Bupropion has amphetamine-like properties even though its mechanism is unclear. Early investigations have focused on its enhanced dopaminergic activity because of reuptake inhibition by the parent compound as a likely mechanism of action, whereas, some studies suggested that bupropion increases the functional efficiency of noradrenergic systems[8]. Both dopaminergic and noradrenergic activities decreased during the period of withdrawal from amphetamine. As in this case, bupropion was able to reverse the withdrawal symptoms. However, further systemic research is needed, i.e. randomized controlled trials to prove its efficacy, and effectiveness in preventing relapse in combination with psychosocial treatment.

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Bupropion ในการรักษาภาวะถอนยาจากแอมเฟตามีน

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การศึกษานี้ เป็นการรายงานผู้ป่วยรายหนึ่งที่มาพบแพทย์ด้วยเรื่อง อาการถอนยาแอมเฟตามีนหลังจากใช้ยามานาน โดยผู้ป่วยมีอารมณ์ ซึม หงุดหงิด อ่อนเพลีย การเคลื่อนไหวเชื่องช้าลง ง่วงนอน แพทย์ผู้รักษาได้ให้ยา bupropion แบบ slow released ขนาด 150 มิลลิกรัมต่อวัน 2 วันต่อมา หลังจากทานยา bupropion ผู้ป่วยมีอาการดีขึ้นอย่างชัดเจน อาการถอนยาดังกล่าวค่อย ๆ หายไปหมด นอกจากนี้ผู้ป่วยยังไม่มีความรู้สึกอยากยา (craving) อีกด้วย ผู้วิจัยได้อภิปรายผลในเรื่องประโยชน์ที่จะนำมาใช้ในทางคลินิก

คำสำคัญ : Bupropion, อาการถอนยา, แอมเฟตามีน, กลุ่มอาการถอนยา

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