The Synergistic (MARATHON) Effect of Combined Methamphetamine with Sexual Stimulant Drugs on Increasing the Likelihood of High-Risk Sexual Behaviors

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Original Article

Abstract

Background: Chronic drug abuse and sexual dysfunction specifically erectile dysfunction may lead drug abusers to seek over-the-counter or non-prescription medications, out of which Sildenafil citrate, sold as the trade name of Viagra® can be considered as a prime and important treatment. Therefore, the research purpose was to draw a comparison and review the role of methamphetamine abuse and sildenafil use in increasing the likelihood of high-risk sexual behaviors (both concomitant and non-concomitant use).

Methods: Hence, a total of 40 patients diagnosed with methamphetamine abuse were recruited through the administration of structured clinical interview for DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, 4th Edition), through purposive sampling and subsequent to being qualified in accordance with the selection criteria by psychologists and general practitioners. All the 40 drug abusers (20 methamphetamine abusers with concomitant use of Aphrodisiac drugs (sexual stimulant pills) and 20 methamphetamine abusers) described their sexual risk behaviors subsequent to the drug use.

Findings: Supported the between-group difference that is to say that, the group with concomitant methamphetamine abuse differed significantly in all the items when compared with the control group. However, this group scored lower on the item of sexual intercourse with drug addicted prostitutes using condom and both groups demonstrated high pick on this item.

Conclusion: Overall, the concomitant methamphetamine chronic abuse with sexual stimulant drugs generates Aphrodisiac drugs impulses and is found to be related to higher frequencies of sexual risk behaviors and sexual intercourse with addicted prostitutes.

Keywords: Methamphetamine, Aphrodisiac drugs, High-risk sexual behaviors

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Introduction

Methamphetamine (methylamphetamie) can be classified into the drug class of central nervous system stimulants and is a psychostimulant and psychoactive drug with numerous slang terms that vary from region to region such as ice, clouds crystal or glass.[1,2] Methamphetamine triggers a cascading release of dopamine in the brain mechanism, and its psychological effects can be marked by dramatic mood swings from euphoria and elation to irritability.[3,4]

Methamphetamine is most structurally similar to amphetamine and most commonly, it is found as a colorless, bitter and non-smelling crystalline solid. Long-term use can have irritability, psychomotor agitation, increased risk of Parkinson's disease, chronic depression and sexual impulsiveness.[5,6] In addition, delusions of grandiosity, hallucinations, hyperactivity, excessive feelings of power and invincibility, repetitive and obsessive behaviors, paranoia are some of the physical and psychological symptoms of methamphetamine abuse with chronic use and/or high dose.[7] At the start of amphetamine abuse, the abuser may exhibit exaggerated and changing sexual attitude and feelings, unprotected and unsafe sex acts, strong and uncontrollable sexual impulses, frequent change of sexual partners and irresponsible sexual behavior.[8] The abuser is not able to perceive wrong-right behaviors while having sex and may display impulsive or reckless behavior. Over time, substance abuse and dysfunction in sexual performance specifically erectile dysfunction may give rise to the use of illegal aphrodisiac drugs (sexual stimulant pills). Overall, methamphetamine use is found to be related to higher frequencies of high-risk sexual activities.[9,10]

Sildenafil citrate, sold as Viagra®, revatio and under various other trade names, is a drug used to treat erectile dysfunction and pulmonary arterial hypertension. It acts by inhibiting cylic guanosine monophosphate (cGMP)-specific phosphodiesterase Type 5, an enzyme that promotes degradation of cGMP, which regulates blood flow in the penis. Since becoming available in 1998, sildenafil has been the prime treatment for erectile dysfunction.[11] Patterson and Semple,[12] Crosby and Mettey,[13] Halkitis and Green,[14] and Spindler et al.[2] found that illegal and even legal stimulant drugs in substance abusers, allows for further probability of sexual risk behaviors. This negative combined synergistic effect is called sex-drug cocktail in the west. Methamphetamines entail higher risk of shaping and reinforcing sexual risk behaviors when compared to other substances such as hashish, opium, crack, heroin, Ritalin and cocaine. This seems to be due to the neurochemical synergistic reaction. One out of five HIV (human immunodeficiency virus)-positive participants was methamphetamine abuser in a longitudinal study done in Los Angeles.[15]

The research findings indicate that methamphetamine abuse heighten the risk of engagement in unprotected intercourse and riskier sexual behaviors.[16] The present research is an attempt to shed light on the role of methamphetamine abuse and sildenafil (Viagra®) use in increasing the likelihood of high-risk sexual behaviors (concomitant and non-concomitant use).

Methods

A total of 40 patients diagnosed with methamphetamine abuse were recruited through the administration of structured clinical interview for DSM-IV (SCID-I). The diagnosed abusers were selected through purposive sampling.[17,18] methamphetamine abusers with concomitant and non-concomitant use of aphrodisiac drugs (sexual stimulant pills) were selected from among the patients who were referred to counseling and harm reduction centers (triangular counseling clinics of AIDS (acquired immune deficiency syndrome), substance abuse and sexually transmitted diseases treatment) in Tehran. Subsequent to being qualified in accordance with selection criteria by psychologists and general practitioners, all the 40 drug abusers (20 methamphetamine abusers with concomitant use of aphrodisiac drugs (sexual stimulant pills) and 20 methamphetamine abusers) described their sexual risk behaviors subsequent to the drug use.

The inclusion criteria included chronic methamphetamine abuse (over 3½ years) at the present time, lack of multiple substance abuse during the previous addiction or earlier (the main previous addiction had started with methamphetamine), aged between 25 and 40 years and the minimum level of secondary education to fill out the required forms and checklists. The exclusion criteria were having an

acute physical illness and concurrent use of other specific substances before or during the study.

To achieve this goal, The SCID-I Axis 1 disorders, was conducted by a clinical psychologist. Subsequent to the initial diagnosis of chronic methamphetamine abuse, the above criteria were considered to select the eligible representative sample (Table 1). Comorbidity with other disorders is usually observed among the patients with substance abuse.[19] Ladouceur et al.[20] have noticed the same problem in their clinical studies. According to this approach and in order to overcome this problem we have selected individuals with the primary diagnosis of chronic methamphetamine addiction and concomitant sexual abuse drugs. Therefore, 40 controlled patients were enrolled subsequent to the selection of the eligible sample.

SCID-Clinical version (CV): The SCID-I Axis 1 disorders: SCID-CV, which was developed by Spitzer[21] was specially designed as an adaptation of the SCID that is intended to introduce the benefits of structured interviewing into clinical and research setting. SCID-CV helps not to resort to the lengthier and more complex process used principally in research studies and dispose of other diagnostic categories which are not related to the study.[22] The SCID-CV is divided into six self-contained modules covering: module A: mood episode, module B: psychotic symptoms, module C: psychotic disorders, module D: mood disorders, module E: substance use disorders, module F: anxiety and other disorder, also included in module F are disorders without diagnostic criteria such as agoraphobia, social phobia, specific phobia, etc. The SCID-CV may be administered to either psychiatric or general medical patients. It is most appropriate for adults (18 years and over), but with slight modification, may be used with adolescents.[23]

This instrument can't be carried out with patients who suffer from serious cognitive disorders or exhibit severe and distressing symptoms of psychotic disorders and having acquired at least 8 years of education is required for full understanding.[24] Tran and Haaga[25] have reported the results indicate moderate to good reliability among formulations constructed by teams of independent clinician that was equal to 0.60 based on a weighted kappa. A Persian version of this interview was administered on 229 individuals by Sharifi et al.[26] and the result of the kappa coefficient was over 0.60. In order to assess the validity of the instrument, Bakhtiyari[22] asked a panel of judges formally to rate the validity, which was rated as having satisfactory and acceptable validity to be used in clinical setting. The test was also shown to have a high 1-week test–retest reliability (r = 0.95).

Substance Abusers' sexual behaviors questionnaire: this 12-item questionnaire was designed and developed by Vaziri and Lotfi Kashani[27] and measures sexual desire and performance, peak sexual demands and sexual risk behaviors. Each dimension is covered with 4 questions. This questionnaire was administered on 30 substance abusers and its test-retest reliability with 15 days of the time interval was equal to 0.76. Each question has been designed in a way to provide a total score for each dimension, and it is possible to compare individuals in each of the possible responses. This questionnaire is based on a four-point scale ranging from 0 "never" to 3 "always" and can be marked verbally or in written form.[24] With regard to the research condition and patients' chronic problem and subsequent to the required evaluations, the short 5-item questionnaire was designed and completed by the respondents (Table 1).

Results

As seen, the sample population was selected based on the demographic characteristics and comparable clinical severity in terms of age, sex and duration of abuse. The mean age and the mean of the total score of the first group with methamphetamine abuse and taking sexual stimulant drug were 34.50 and 2.24, respectively.

Table 1. The aim of questionnaires' administration and their timing

Questionnaire	Aim	Timing
SCID-I	Clinical differential diagnosis of methamphetamine abuse	Prior to patient selection and during the screening phase
Oral interview	Self-report diagnosis of methamphetamine abuse	outlining the baseline level

SCID-I: Structured clinical interview for DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, 4th Edition)

Moreover, the mean age and the mean of the total score of the second group with methamphetamine abuse were 35.00 and 0.97, respectively (Table 2).

Table 3 illustrates the means of the items in the questionnaire in two groups. As observed, the first group with concomitant abuse of methamphetamine and sexual stimulant drug scored higher on the items of sexual power and performance with substance abuse, rapid, sharp and frequent increase of sexual behavior, sexual intercourse with strangers without condom, anal and oral sex and masturbation and sexual intercourse with drug addicted prostitutes with condom.

Moreover, the group with concomitant abuse of methamphetamine and sexual stimulant drug scored higher on the items of sexual power and performance with substance abuse, rapid, sharp and frequent increase of sexual behavior, sexual intercourse with strangers without condom, anal and oral sex and masturbation and sexual intercourse with drug addicted prostitutes with condom (Table 3).

Discussion

The data presented in figure two demonstrate the between-group difference on all the items specifically the fourth one. Aphrodisiac drugs (sexual stimulant pills) users showed a sharp increase of sexual stimulations on all the items when compared with the non-using group. Overall, as observed, both groups showed tendency to have sexual intercourse with drug addicted prostitutes using condoms.

The sexual desire in single methamphetamine drug abuse was only slightly less than concomitant methamphetamine abuse and Aphrodisiac drugs (sexual stimulant pills). However, high-risk sexual behaviors are due to their decreasing and unacceptable level of socio-sexual networks, financial poverty, and emotional strains. Unpleasant and visible symptoms of methamphetamine addicted individuals result in the elimination of their names from the customers' list of healthier and more high-class prostitutes. Therefore, they seek for street and low-cost prostitutes who are typically addicted. Concomitant methamphetamine abuse with sexual stimulant drugs generates sexual impulses that reinforce high-risk sexual behaviors with a network of sexual partners who are likely of contracting a sexually transmitted infection (STI) even with using a condom. Providing and distributing condoms can help these individuals recognize the benefits of the less riskier sexual activities and reduced likelihood of contracting HIV and STI; however, some of them cannot control themselves in sexual intercourse with partners who are highly likely of being HIV- or STI-positive and their preference was obvious on the 5th item of the questionnaire which indicated their tendency in using condom in high-risk sexual activities (Figure 1).

Conclusion

Overall, it can be concluded that the concomitant methamphetamine chronic abuse with Aphrodisiac drugs (sexual stimulant pills) generates aphrodisiac drugs impulses and is found to be related to higher frequencies of sexual risk behaviors and sexual intercourse with addicted

Table 2. Patients' demographic characteristics

Age range (year)	Sex	No.	Duration	Sample	Mean of total score
34.5	Male	20	4 years, approximately	Methamphetamine abuse and sexual stimulant drugs	2.24
35.0	Male	20	4 years, approximately	Methamphetamine abuse	0.97

Table 3. Comparisons of groups' mean scores on the five items of substance abusers' sexual behaviors questionnaire

Item	Mean	
	Concomitant abuse	Non-concomitant abuse
Increase of sexual power and performance with substance abuse	2.30	0.73
Rapid, sharp and frequent increase of sexual behavior	2.40	0.83
Sexual intercourse with strangers without condom	1.90	0.90
Anal and oral sex and masturbation	1.80	0.70
Sexual intercourse with drug addicted prostitutes with condom	2.80	1.70

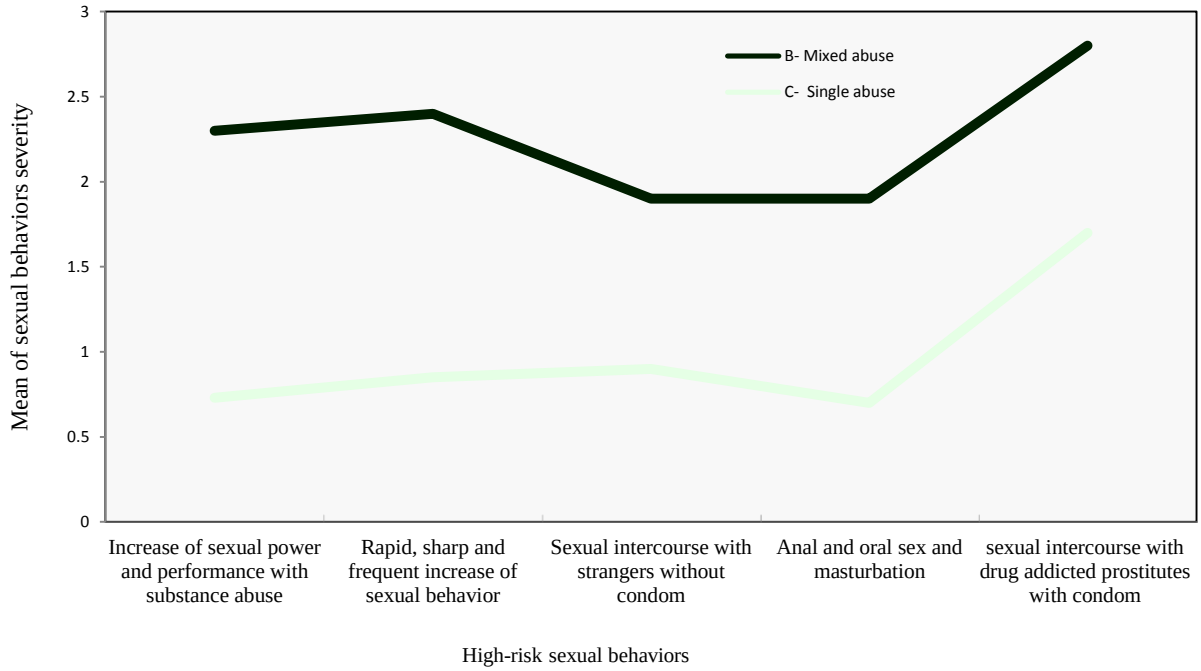

Figure 1. Comparison of high-risk sexual behaviors in two groups of non-concomitant methamphetamine abuse and concomitant methamphetamine abuse and sexual stimulant drugs

prostitutes. These findings point to sexual marathons as a possible contributor to rising HIV rates in the combined methamphetamine drug and sexual stimulant drugs.

Conflict of Interests

The Authors have no conflict of interest.

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اثر ترکیب هم‌افزا (ماراتن) سوء مصرف هم‌زمان مت‌آمفتامین با داروهای محرک جنسی در افزایش بروز رفتارهای پرخطر آمیزشی

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مقاله پژوهشی

چکیده

مقدمه: با مرور زمان و سیر مزمن سوء مصرف مواد و ناتوانی در برخی حوزه‌های کارکرد جنسی به خصوص ناتوانی نعوظ، فرد سوء مصرف کننده اقدام به درمان‌های خودسرانه مصرف داروهای محرک جنسی می‌کند که یکی از مهم‌ترین این داروها سیلدنافیل سیترات (ویاگرا) نام دارد. مطالعه حاضر گزارش مختصری از بررسی نقش سوء مصرف مت‌آمفتامین و سیلدنافیل (ویاگرا) به تنهایی و در موقعیت ترکیب با هم در احتمال بروز رفتارهای جنسی پرخطر بود.

روش‌ها: ابزار SCID-I (Structured clinical interview for diagnostic and statistical manual of mental disorders) جهت تشخیص سوء مصرف مزمن مت‌آمفتامین استفاده گردید. معیارهای ورود به پژوهش و خروج از آن توسط روان‌شناس و پزشک مرکز انجام و ۴۰ آزمودنی سوء مصرف کننده مزمن وارد مرحله ثبت خط پایه شدند. هر ۴۰ آزمودنی (۲۰ نفر سوء مصرف توأم مت‌آمفتامین با سیلدنافیل و ۲۰ نفر هم سوء مصرف تنها با مت‌آمفتامین) به توصیف رفتارهای پرخطر جنسی خود پس از مصرف مواد پرداختند.

یافته‌ها: گروه سوء مصرف توأم با مت‌آمفتامین در همه بخش‌ها نسبت به گروه شاهد تفاوت معنی‌داری داشت که البته این تفاوت در بخش روابط با زنان روسپی معتاد با کاندوم کمتر بود و هر دو گروه در این گویه برافراشتگی زیادی داشتند.

نتیجه‌گیری: سوء مصرف توأم مت‌آمفتامین مزمن با داروهای محرک جنسی سبب تولید تکانه‌های تحریک جنسی می‌شود که علاوه بر تولید رفتارهای پرخطر نوعی ارتباط جنسی با شبکه‌ای از زنان مشکوک به آلودگی را (هرچند با استفاده از کاندوم) رقم می‌زند.

واژگان کلیدی: مت‌آمفتامین، داروی محرک جنسی، رفتار پرخطر جنسی

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