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Methamphetamine Cured my Cocaine Addiction

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Abstract

Cocaine dependence is an enduring problem and years of research and drug development has yet to produce an efficacious pharmacotherapy. Recent clinical research suggests that chronic treatment with amphetamine-like medications produces tolerance to cocaine's reinforcing effects and may offer a viable pharmacotherapy. Three methamphetamine-dependent participants that had been in our clinical laboratory experiments and previously addicted to cocaine are reviewed. Data obtained from initial screen and informal conversation suggested that all participants considered methamphetamine to have helped them stop using cocaine and eliminate cocaine craving. Methamphetamine also significantly decreased their alcohol consumption but did not alter cannabis or nicotine use.

Keywords

Drug abuse; Stimulants; Tolerance; Pharmacotherapies; Prodrug

Introduction

Cocaine dependence remains a major medical, social and legal concern. Years of research assessing potential pharmacotherapies for cocaine dependence have not yielded a single effective medication suggesting a different drug development strategy is needed [1]. Cocaine increases central catecholamines that are linked to its positive subjective and reinforcing effects [2]. Drugs with similar pharmacological action to that of cocaine such as d-amphetamine (AMPH) and medically formulated methamphetamine (METH) administered chronically produce tolerance to its reinforcing effects and may be useful in treating cocaine dependence. Indeed, numerous preclinical animal studies show that chronic treatment with AMPH or METH produces tolerance to cocaine's behavioral and reinforcing effects in animals [3–9]. Accordingly, recent clinical studies show that AMPH attenuates cocaine's positive subjective effects [10] and that treatment with sustained-release METH reduces rates of cocaine positive urine and decreases craving for cocaine in cocaine-dependent individuals [11]. Consistent with these studies, we review three unique case histories of METH-dependent participants previously addicted to cocaine who abruptly stopped when they started using METH. In essence, they stated that METH "cured" them of their cocaine addiction.

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Materials and Methods

A detailed demographic and drug use history was obtained during a basic screening interview for admission into one of our clinical laboratory trials [12,13]. Participants tested positive for METH on initial screening yet none demonstrated overt clinical signs of METH intoxication. Participant primary and secondary screens were reviewed. Further interviews with the individual by a physician provided more thorough background information regarding their previous addiction to cocaine. Inquiry was aimed at why they thought METH may have helped them and what new adverse consequences they may have experienced by abusing another highly addictive substance.

Results

Participant 1 (P1)

P1 was a 40 year-old male Caucasian of Philippine descent who used cocaine and alcohol heavily prior to 2005. By his own estimation he was “severely” addicted to cocaine and alcohol. Addiction to these substances directly contributed to numerous adverse interactions with law enforcement and irreparable harm in relations with his family and friends. Although his immediate family was wealthy, he was in constant financial difficulty. He described cocaine as the “ultimate evil” that brought out the “hater” in him. Depression, suicidal ideation, financial stress and threats of violence from cocaine dealers forced him to leave his home. Soon after he moved to Houston, he was given METH at a party and felt it had “benefitted his being”. He preferred METH over cocaine, stating that the “high” was cleaner and longer lasting than cocaine. He liked the cognitive effects and felt he was productive when taking METH. He stated emphatically that he had not used, nor had any craving for cocaine or alcohol, since first starting METH even when given the opportunity to use these substances. During screening, he reported that he used METH 25 days out of the 30 prior to the interview and no cocaine or alcohol for 4 years. Similar to consequences he suffered when abusing cocaine, he continued to have financial and legal problems related to his heavy METH intake. In contrast to his past cocaine and alcohol abuse, METH had no effects on his daily nicotine (1 pack per day) and cannabis (2 joints per day) use. In fact, P1 indicated that cannabis, but not nicotine, increased both the ‘high’ and ‘desire’ associated with using METH.

Participant 2 (P2)

P2 was a 40 year old, Caucasian male musician who had some success touring and recording with various popular bands in the 1980s and 1990s. He described his 20 years of heavy drinking and 10 years of abusing cocaine as “insane” yet “normal” (similar to his peers) given his profession. He also worked as a bar tender, which allowed him continuous access to alcohol when he was not touring with his band. Four years ago he stopped doing cocaine and alcohol after he tried METH. According to P2, METH allowed him to be more productive even though he felt he rarely finished any projects he initiated. His last gainful employment was in 2009 teaching guitar lessons which he left likely due to paranoia secondary to METH. Similarly, P2 stated that the reason he left his last band was because the leader: “kept giving me that evil eye, ya know, when they look at you like that, it’s a bad sign. I got out.” Like P1, P2 felt that the METH high was ‘smoother’ and lasted much longer so it was worth the money, as compared to cocaine. On initial screening, he stated he had ½ a beer in the last 30 days and no craving for either cocaine or alcohol. Interestingly, METH did not alter P2’s daily cannabis (unspecified amount) or nicotine (1 pack per day) use. P2’s responses on multiple drug, use questionnaire indicated that cannabis reduced the ‘high’ associated with METH and decreased ‘desire’ for the drug whereas nicotine had not effect.

Participant 3 (P3)

P3 was a 30 year old Hispanic male, who had been using METH for 7 years. At screening he stated he had used cocaine heavily for approximately 2 years and alcohol for 14 years. He last ingested cocaine in 2005 and described his present alcohol use as 1–2 times a month at the most. Similar to both P1 and P2 METH completely abolished his desire for cocaine and alcohol. Asked why this may be the case he offered that on one occasion he took cocaine while on METH and 'felt nothing' and that "METH smokes coke", implying that METH blocked cocaine's effects. Similar to the participants reviewed above, P3 enjoyed METH's cognitive effects and felt he was more productive yet he always needed money to support his large METH intake (approximately 1 gram per day). He was inconsistently employed and held numerous jobs often circumventing resources from them clandestinely. He also stated that METH enhanced his sexual performance, which was important to him since he worked in pornography. METH did not alter his daily cannabis (2–3 joints per day) or nicotine (½ pack per day) use. P3's multiple drug use questionnaire responses indicated that cannabis increased METH's 'high' which he described the combination as a "roller coaster ride". In contrast, cannabis decreased 'desire' for METH whereas nicotine had no appreciable effects.

Discussion

These cases appear to support preclinical and clinical studies suggesting that chronic treatment with AMPH-like stimulants—such as METH—may be efficacious for cocaine dependence [11,14]. Interestingly, each participant's craving for cocaine was abolished once they began using METH. In general, all stated that they liked the 'high' better than cocaine. This could suggest that they are likely replacing one addictive substance for another similar to methadone maintenance therapy for opioid dependence. Still, once they started using METH, their craving for cocaine was abolished. Moreover, the one participant who ingested cocaine while on METH felt no effects from the drug indicating that cocaine's positive subjective effects were blocked. This anecdote is consistent with recent controlled clinical studies showing that chronic treatment with AMPH blocks cocaine's positive subjective effects and sustained-release formulations of METH decrease cocaine use in humans [10,11]. The neurobiological basis by which chronic METH decreases cocaine's subjective effects is unknown. Evidence suggests however, a tolerance-inducing mechanism [4,6]. AMPH and METH are not viable treatments for cocaine dependence due to high abuse liability and obvious adverse social, financial and psychiatric consequences associated with use of these stimulants as demonstrated by the cases described above. Medications used to treat attention deficit hyperactivity disorder in children and adolescents in sustained – release formulations may be a better option. Also, stimulant pro-drugs like lisdexamfetaminedimesylate that is activated only after it is metabolized may offer a viable option since their inherent slow onset of action and entry into the CNS reduces abuse liability [2,15]. Our research group is currently planning laboratory studies assessing stimulant pro-drugs as potential medications for cocaine dependence.

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