The Standard Low Dose of Oral Cocaine Used for Treatment of Cocaine Dependence

Teobaldo Llosa. "The Standard Low Dose of Oral Cocaine Used for Treatment of Cocaine Dependence."
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i. Abstract

Coca tea (CCT) has been used for the treatment of cocaine dependence. Two previous reports found that treatment that includes CCT can be successful in controlling relapse to cocaine dependence. In the current study, CCT plus counseling was used to treat cocaine dependence in 23 cocaine-addicted coca paste smokers seeking treatment at an outpatient clinic in Lima, Peru. Cocaine lapses fell from 4.35 times a month prior to treatment to 1.22 during treatment. Mean abstinence increased from 32 days before treatment to 217.2 days during treatment. The current results support the effectiveness of CCT for preventing relapse in cocaine-addicted patients.

KEY WORDS: oral cocaine; coca tea; cocaine treatment.

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I. Introduction

Cocaine hydrochloride (in capsules of gelatin) has been used to treat psychiatric symptoms such as steep disturbances in depressive patients (1). Cocaine alkaloid as contained in coca leaves (CCL) has been used as an antifatigue agent, as a substitute for coffee, as a fast-acting antidepressant, as an energizer, and as a substitute stimulant to wean users of amphetamines and cocaine from those drugs (2, 3). Cocaine contained in coca leaves is well absorbed by the gastrointestinal tract when coca leaves are ingested alone or mixed with pudding (4), drunk as a coca tea infusion (5), or ingested as coca tablets (6). Recently, oral cocaine administration has been mentioned as a potential prophylactic treatment for cocaine abuse (7), and previous reports have described the use of coca tea (CCT) to decrease withdrawal and control relapse in cocaine dependence (8, 9).

Methods of oral cocaine administration have included chewing coca leaves, chewing coca gums, drinking infusions of coca leaves (3), ingesting coca tablets (6), swallowing capsules

(1), and drinking coca tea (8, 9). The typical amount of cocaine ingested orally ranges from 4.8 mg (9) to 200 mg per day (1). When used to treat cocaine dependence, the period of use can range from a few days (1) to 1 year or more (9).

Given the limited effectiveness of existing treatments for relapse control in cocaine dependence, the objective of the current study was to conduct a preliminary investigation to evaluate the effectiveness of low doses of oral cocaine for controlling the craving and relapse phenomena in cocaine dependence.

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II. Methods

II. a. Subjects
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II. a. Subjects

Subjects were 23 chronic coca paste smokers who met DSM-III-R criteria for the diagnosis of cocaine dependence. All subjects were male and enrolled in outpatient treatment in Lima, Peru. Subjects' mean age was 23.1 years (SD = 6.4 years). At the initiation of treatment, the mean history of cocaine smoking was 2.7 years, the mean number of cocaine (coca paste) cigarettes per use session was 22.4 (SD = 14.9), the mean number of lapses per month was 4.3 (SD = 1.7), and the mean longest period of abstinence from cocaine during the past year was 32 days (SD = 38.1).

Patients were instructed to ingest two bags of coca tea (CCT) twice a day for 3 months or more. Each dose consisted of two bags of CCT steeped in 180 ml of water, with sugar or honey added as the patient desired. This regimen resulted in the ingestion of approximately 17.68 mg of coca per day.

II. b. Coca Paste Smoking

Coca paste (CCP) has been the most common form of cocaine use in Peru and other South American countries since the 1970s. CCP is a powdery amorphous substance of complex composition. Its litmus reaction is alkaline or basic. Coca paste is an intermediate product in the production of cocaine hydrochloride. Substances used to elaborate coca paste are coca leaves, kerosene, sulfuric acid, ammonia, carbonates, and other impurities (10). Coca paste is between 40 and 85% cocaine (11), with an average cocaine content of 49.3% (12). Its chemical composition is more complex than that of cocaine hydrochloride (CCH), free base (FRB), or crack (CCK) (13).

Coca paste is smoked in cigarettes. Its initial onset of action is 8-10 see, the duration of the "high" is 5-10 min, and the average acute dose is 60-250 mg. Cocaine peak plasma levels are 300-800 ng/ml, the bioavailability (percentage absorbed) is 6-32% (11), and benzoylecgonine peak urine levels are (50,000 ng/ml (14).

Typically, coca paste is mixed with tobacco and, occasionally, with marijuana. Addicts take out more than one-half of the tobacco in a cigarette, mix it with coca paste, and then refill the cigarette with the mixture (14). Tobacco and marijuana also have pharmacological effects and, therefore, cannot be considered simply as filler materials (15).

In the treatment of cocaine abusers, the patient who is also a cigarette smoker should be considered to be polyaddicted. A typical CCP addict smokes an average of 20 cigarettes per day (range, 6 to 50 cigarettes), with approximately 95 mg of cocaine in each cigarette (range, 60.8 to 129.2 mg of cocaine). Approximately 1900 mg of cocaine is consumed per day (range, 1200 to 2584 mg of cocaine). Typically, a coca paste cigarette contains 4 mg of nicotine. Approximately 80 mg of nicotine is consumed per day (17). It is possible that concomitant nicotine addiction may contribute to the high rate of relapse among cocaine-dependent patients whose preferred method of administration is coca paste smoking (16); such patients often experience relapse binges as frequently as at 1 week or less (14).

II. c. Coca Tea

Each regular coca tea (CCY) bag, as sold in supermarkets, contains 1 g of crushed coca leaves containing an average of 5.3 mg of cocaine. When one bag is steeped in 180 ml of hot water for 3 min, 4.42 mg of cocaine is released (18).

II. d. Procedure

Patients involved in the study attended counseling sessions every week during the three 3 months of the study and every 2 weeks during the last 9 months. Four patients that live outside of Lima attended counseling sessions twice a month for the first 3 months and once a month during the last 9 months. In all sessions, patients were accompanied by a relative who lived in the same home and who provided collateral reports of patients' behavior and use of coca tea. Twelve (52%) patients were married, but only five of these patients lived with their wives.

Each time that the patients attended the sessions, they answered yes or no to the following five questions concerning symptoms of coca paste craving: (i) Do you think of coca paste several times a day? (ii) Do you need or want coca paste? (iii) Do you pursue coca paste ? (iv) Do you feet sick because of using coca paste? and (v) Do you have personal troubles resulting from your use of coca paste? Responses were summed (total number of yes responses) to provide an index of cocaine craving.

No other medications were used by patients, except for occasional anxiolytics at night for sleep, 100 mg phenytoin (one patient) and 200 mg carbamazepine (one patient). All patients were permitted to smoke regular cigarettes, drink coffee, or drink alcohol. Furthermore, no patient met DSM-III-R criteria for a diagnosis of alcoholism at the point of study entry.

Patients received a medical examination, including hematology, blood chemistries, and urinalysis at the start of treatment. All patients had two positive benzoylecgonine urine tests prior to study entry. Only 60% of patients were administered monthly urine drug tests during treatment, and 80% of patients who reported abstinence from CCP demonstrated negative urines.

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III. Results

Table 1 presents patient-by-patient relapse and abstinence data. After 1 year of treatment, the average number of relapses per month across patients fell from 4.35 (SD = 1.71) prior to CCT treatment to 1.22 (SD = 1.66) during CCT treatment (t test = 7.58; $p < 0.0001$). The mean reported longest CCP abstinence increased significantly, from 32 (SD 36.8) days

before treatment to 217.2 (SD 128. 1) days during treatment (t test 6.34; $p < 0.0001$). The mean retention time in treatment was 309 days (SD = 105). Eighteen of the patients (78.3%) completed all 360 days of treatment. Fifteen patients (65.2%) improved to the point that they could maintain abstinence for the last 6 months or more. Three patients (13.0%) were treatment failures (could not maintain abstinence; relapsed several times during treatment, mainly in the last months, but remained in treatment). Five patients (21.7%) left the study before 270 days of treatment. It should be noted that collateral reports in every case confirmed the patients' self-reports of cocaine-related behavior.

Table I. Patient-by-Patient Results

Pt. No.	ARPT	ARDP*	LAWF	LADT	
1	4	0	15	360	Improve
2	2	0	30	360	Improve
3	8	0.16	7	330	Improve
4	4	1.33	180	180	Improve
5	2	0.58	90	210	Fail
6	1	1.	30	30	Abandon
7	4	0.41	7	270	Improve
8	6	4.5	7	7	Abandon
9	6	2.7	14	45	Fail
10	3	0.3	14	240	Improve
11	4	3.0	14	10	Abandon
12	5	1.41	7	180	Fail
13	5	3.75	60	8	Abandon
14	4	0.25	40	300	Improve
15	3	0.16	30	300	Improve
16	4	0.16	30	330	Improve
17	4	0.41	20	300	Improve
18	4	0.16	20	300	Improve
19	6	0	7	360	Improve
20	4	0.66	14	300	Improve
21	6	6.	30	5	Abandon
22	3	0.41	40	300	Improve
23	8	0.66	30	270	Improve
X	4.35	1.22	32	217.2	
SD	1.17	1.66	36.8	128.1	

Note: ARPT, average number of relapses per month prior to treatment; ARDT, average number of relapses during treatment; LAWT, longest period (days) of attempted abstinence without treatment; LADT, longest period (days) of abstinence during treatment.
*Obtained by dividing the total number of relapses experienced during treatment by the total number of months retained in treatment.

All patients accepted coca tea as treatment, but 18 patients (78.3%) agreed that they would

have preferred to take the same medication in capsules rather than in liquid. Craving questionnaire scores dropped from 4.39 at the beginning of treatment to 1.47 during treatment. No medical or behavior abnormalities were detected during treatment.

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IV. Discussion

No commonly used medical treatment for the prevention of relapse to cocaine dependence is particularly effective. Several treatments has been evaluated in controlled studies including psychotherapy (19), pharmacotherapy (20-23), neuroelectric therapy (24), and psychosurgery (25, 26). Other interventions such as social policy strategies, acupuncture, and religious or philosophical counseling have not been evaluated in a controlled manner.

Anecdotal reports of the use of coca tea for the control of craving in cocaine users have been published (8, 9). However, this literature has not described the exact amount of cocaine received by patients when drinking the coca tea infusion. The current study is the first to examine the efficacy of a standard low dose of cocaine alkaloid administered in regular coca tea for the treatment of cocaine dependence.

The treatment was well accepted by the patients and their relatives. No medically adverse effects were reported by the patients, and patients showed fewer lapses, longer periods of abstinence, and reduced craving than prior to treatment. These results suggest the potential effectiveness of low doses of oral cocaine for controlling craving and relapse in cocaine dependence.

In summary, this initial study attempted to control relapse in cocaine dependence through the use of coca tea. The results suggest that standard low doses of coca tea can be helpful in treatment of cocaine dependence. Future studies should attempt to examine the efficacy of cocaine tea for the treatment of cocaine dependence in a more rigorous and controlled manner.

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