

The Use of Ascorbic Acid and Mineral Supplements in the Detoxification of Narcotic Addicts

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Since its inception in 1968, the San Francisco Drug Treatment Program, Inc., has responded to the mental and physical health needs of narcotic addicts. The search for safer, cost-effective detoxification alternatives grew from the controversial use of methadone and propoxyphene napsylate (Darvon N R) and has led to an exploration of nontraditional methods of detoxification which would address the poor nutritional habits of narcotic addicts. The present pilot study investigated the use of megadoses of ascorbic acid as sodium ascorbate, multivitamins, and mineral supplements in the treatment of drug withdrawal symptoms. A total of 227 subjects were compared; 30 subjects utilizing the ascorbic detoxification procedure, 186 subjects utilizing symptomatic relief medications,

for their essential donations, and wish to acknowledge Dr. R. Bluestein for his assistance at the onset of this project. and 11 clients utilizing a combination approach of ascorbic acid and symptomatic medications. The results indicate that the ascorbic acid procedure is slightly more effective than symptomatic medications in alleviating narcotic withdrawal symptoms, and that the combination approach shows the greatest reduction in symptoms. Findings indicate the suitability of this approach to an outpatient setting, pointing to its acceptance potential, success rate, and cost effectiveness. This detoxification method warrants further research and careful consideration as a holistic approach to the process of drug rehabilitation.

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Introduction

The abuse of drugs and alcohol has become recognized as a major health problem to millions of Americans. The appearance of drug abusers on all socioeconomic and racial levels has made this problem evident to clinicians, physicians, judges, and employers alike. Thus, many efforts have been made in recent years to treat the drug abuser more effectively and holistically.

One area of concern of the addict or drug abuser is the process of drug withdrawal. Withdrawal symptoms differ according to the individual and the drug(s) of abuse, but are typically painful and anxiety producing. Methods commonly used in the past by clinicians and physicians to help alleviate drug withdrawal symptoms include a combination of symptomatic medications such as Darvon, Librium, Belephen, and Chloral Hydrate, Methadone, Codeine, and Valium, and intensive psychotherapy. While these and other chemical combinations have long been employed as drug detoxification alternatives, many of them present harmful or uncomfortable side effects of their own. Methadone is indeed a powerful addictive substance. Thus individuals working with drug addicts continue to search for more effective, safe methods to help make the withdrawal process an easier one, and to encourage a healthier lifestyle.

San Francisco Drug Treatment Program, Inc.'s current study of the use of megavitamin therapy for the treatment of narcotic withdrawal began in December, 1977, in response to our clients' need to find a more healthful alternative to standard chemical detoxification procedures. Megavitamin therapy using sodium ascorbate, ascorbic acid, calcium and other mineral supplements was seen as a cost-effective, convenient, **safe** way to detoxify narcotic addicts, and is also a way to address the poor nutritional habits of our client population.

Background and Rationale For Use of Megadoses of Ascorbic Acid

Since the discovery and synthesis of ascorbic acid in the early 1930's, a vast amount of medical research has been carried out on the physiologic effects of this substance and its possible uses as a therapeutic agent in various disease states (Stone, 1972; Pauling, 1970; Ritzel, 1961; Magne, 1963; Shaffer, 1970; Holmes and Alexander, 1942; Holmes, 1943; Schlegel et al., 1969; Bartelheimer, 1939; Hoffer and Osmond, 1963). In addition to being identified as vitamin C, the substance is known as ascorbic acid (and its salt sodium ascorbate). Ascorbic acid in small

amounts (10-60 mg) is required in the human diet to prevent the endstage deficiency state known as scurvy, but both ascorbic acid and sodium ascorbate have been shown to be of benefit in large doses (megadoses) in a great variety of pathologic conditions (Stone, 1966; Klasson, 1951). Medical research and clinical experience have yielded results which tend to support the following possible therapeutic effects of ascorbic acid: preventing heart disease by lowering blood cholesterol and preventing deterioration of arterial walls (Stone, 1972); counteracting the side effects of hay fever and various allergic conditions (Stacpoole, 1975); helping relieve pain and decrease healing time in burn patients (Klasson, 1951; Klenner, 1971); helping control leprosy (Ferreira, 1950; Floch and Sureau, 1952); combating urinary tract infections and inflammations (Stone, 1972); preventing and/or ameliorating symptoms of the common cold (Pauling, 1970); promoting increased survival in terminal cancer patients with improvement in symptoms (Stone, 1972); treating many viral diseases (especially hepatitis, mononucleosis, and viral pneumonia) (Cathcart, 1977); enhancing the effectiveness of antibiotics in bacterial diseases (Gupta and Guha, 1941; Sirsi, 1952).

These reports, published in respected professional journals, yield intriguing findings in view of the fact that megascorbate therapy has not been accepted by the traditional medical establishment.

These therapeutic effects have been more effectively demonstrated using doses of ascorbic acid many times in excess of the daily doses required in human nutrition to prevent scurvy. For example, in the treatment of viral hepatitis and pneumonia as much as 150 gram doses have been used orally and intravenously without evidence of adverse effects (Cathcart, 1977).

The Application of Ascorbic Acid To The Detoxification of Narcotic Addicts

More pertinent to the San Francisco Drug Treatment Program, Inc., pilot study is the

recent study by Dr. Alfred Libby and Irwin Stone (published in the December, 1977, **Journal of Orthomolecular Psychiatry**) on the use of megadoses of ascorbic acid to detoxify heroin addicts. They compiled 100 case reports of heroin addicts whom they detoxified using ascorbic acid and/or sodium ascorbate in doses of 25-85 g per day for the first few days, gradually tapering to a holding dose of approximately 10 g per day. In addition, based on the theory that addicts are malnourished in general and protein deficient in particular, most of these patients were given high levels of multivitamins and minerals and a predigested protein preparation.

The patients in this study almost uniformly reported a loss of craving for drugs while taking megascorbate. These patients were treated for 1-2 weeks in a residential setting, and then patients were discharged on holding doses of ascorbic acid for outpatient follow up.

Possible Side Effects

The possible side effects of megadoses of ascorbic acid are remarkably few. They can be divided into short-term and long-term complications. Of the short-term problems, the most common and well documented is gastrointestinal distress with symptoms of heartburn, stomachache, diarrhea, and excess gas. These are generally dose dependent and are influenced by the concept of "bowel tolerance," meaning that the dose that will cause gastrointestinal symptoms increases in proportion to how sick the patient is. For example, a person who might normally get diarrhea on 2 g per day will be able to tolerate 50 g per day if he has the flu.

Other short-term side effects that have been reported include: a rash in the rare patient who proves allergic to ascorbate; worsening of active peptic ulcer disease (may be avoided by using only sodium ascorbate, which has a high pH); overloading a patient having hypertension or congestive heart failure with too much sodium (avoided by using only ascorbic acid); bitter taste of ascorbic acid (ascorbate is tasteless).

Possible complications of long-term use of

megadoses of ascorbic acid that have been suggested but not proven include: formation of oxalate or uric acid stones in the urinary tract; destruction of vitamin B-12; pentosuria and possible increased chances of infertility or abortion; and dependency (people taking 10-15 g per day for years might get sick if they stop). None of these suggested complications have been confirmed by researchers and clinicians who have been using megadoses of ascorbic acid in humans for up to 30 years. However, these researchers do suggest that due to the chelating effects of ascorbic acid, supplemental multivitamins and minerals be taken simultaneously.

Goals of San Francisco Drug Treatment Program, Inc., Pilot Study

A pilot study, suggested by the research of Libby and Stone (1977) was initiated in December, 1977, to examine the effects of megadoses of ascorbic acid/sodium ascorbate in the outpatient detoxification of heroin addicts. Volunteers from the San Francisco Drug Treatment Program, Inc., served as subjects for this study.

Goals of the San Francisco Drug Treatment Program, Inc., pilot study were identified as follows: 1. Compare the effectiveness of the ascorbic acid/sodium ascorbate detoxification procedure with symptomatic medications in alleviating withdrawal symptoms. 2. Determine the appropriateness of this detoxification approach in an outpatient setting.

Methodology

In order to more easily compare the effectiveness of the two detoxification procedures (ascorbic acid and symptomatic medications), three detoxification groups were established: (1) subjects using only the ascorbic acid procedure; (2) subjects using symptomatic relief medications; and (3) subjects using symptomatic relief medications for three days *followed* by the ascorbic acid procedure for the remainder of the detoxification period.

DETOXIFICATION OF NARCOTIC ADDICTS

At the point of intake, subjects were given the option of participation in one of the three detoxification groups and were assigned a counselor who dealt with clinical issues of concern during the patient's treatment period.

All subjects received a routine physical examination from the Medical Director upon admission to the program. Following the examination, a symptom checklist was completed for each subject. The methods utilized in the daily recording of subject symptoms were subject report (subjective) and interviewer observation of symptoms (objective). All symptoms were tabulated daily for each client. Common symptoms of narcotic withdrawal, which were recorded, include runny eyes and nose, sweating, chills, muscle aches and pains, diarrhea, abdominal cramps, craving for drugs, loss of appetite, and difficulty sleeping. A client met regularly with an assigned counselor who dealt with clinical issues, such as the relationship of physical well-being to psychological health. Subjects in all groups followed a 21-day detoxification protocol.

Group #1 Ascorbic Acid Procedure

The procedure for the group consisted of the following: sodium ascorbate or ascorbic acid, in crystalline form, dispensed in packets containing 24-48 g per 24 hours for five to seven days, tapering to 8-12 g per day for 14 days; multivitamins and multimineral tabs, one to three times per day for 21 days; calcium complex and magnesium tabs, one, three times per day; and liquid protein (20 oz.) three times per day for three to five days. Individual dosages were dependent upon the symptom checklist report. Dosage sheets were maintained on each client.

Group #2 Symptomatic Medication Procedure

Symptomatic relief medications administered to subjects in this group consisted of the following: Propoxyphene hydrochloride, 65 mg, six times per day for 21 days; Belephen #3, three times per day for 14 days; Librium, 10 mg three times per day for 21 days; Chloral Hydrate, 1,000 mg per

day at bed time for seven days. Symptomatic medications were routinely administered in individual medication packets, and dosage levels were lowered gradually as withdrawal symptoms decreased during the 21-day detoxification period. Medication sheets were maintained on each subject depicting daily dosage levels.

Group #3 Combination Procedure

Subjects participating in this group were administered routine doses of symptomatic medications for three days. On the fourth day subjects were given sodium ascorbate in doses determined by the number of subjective and objective withdrawal symptoms. Dosage levels were ascertained by the Medical Director and/or Program Nurse and were tapered during the remaining 18 days of the 21-day detoxification period according to subject need. These clients also received multivitamins and multimineral tabs, one, three times per day for 21 days, and calcium complex and magnesium tabs, one, three times per day. Medication and dosage sheets were maintained for each client.

Discussion

The six-month pilot study has yielded data on 227 subjects, the total number of persons requesting detoxification services from this agency since December, 1977.

Table 1 represents the breakdown of this data according to the three detoxification groups in this study. The sex ratio of subjects in all three groups was typical of the program as a whole, as was the racial ratio. The most notable differences between groups occurred in the average age of subjects in Groups 1 and 3, which was slightly higher than that of the total program and of subjects in Group 2. On the average, those clients utilizing symptomatic medications were younger, reported larger daily habits, and had a shorter period of addiction than did subjects in either of the other groups. They remained in the detoxification phase of the program longer than the other subjects.

TABLE 1

Background Data of all Subjects

	GROUP 1 Ascorbic Acid	GROUP 2 Symptomatic Medications	GROUP 3 Combination
Total Number of Clients: 227	30	186	11
Number of Clients in Group	113%	(82%)	(5%)
Sex of Clients	22 173% Male 8 127% Female	135 173% Male 51 (27%) Female	7 (64%) Male 4 (36%) Female
Race	17 (56%) Caucasian 8 (27%) Black 5 (16%) Asian, Spanish Indian	115 (62%) Caucasian 39 (21 %) Black 32 (17%) Asian, Spanish	5 (46%) Caucasian 5 (46%) Black 1 (8%) Spanish
Average Age	32 years	28 years	33 years
Average Amount Used	\$70.00 per day	\$100.00 per day	\$72.00 per day
Average Length of Run	17 months	10 months	15 months
Average # of years used	9 years	7 years	9 years
Average # of days in program	8 days	17 days	10 days
Prior treatment attempts at this program	63% no prior treatment	66% no prior treatment	72% no prior treatment

TABLE 2

Average Number of Symptoms Reported

	GROUP 1 Ascorbic Acid	GROUP 2 Symptomatic Medications	GROUP 3 Combination
Day#1	6.5	•8	9
End of Week #1	3	8	1.1
End of Week #2		7.5	1
End of Week #3		6.5	
Last Reported number of symptoms	2	•6.5	1
	* DATA ON 108 CLIENTS		

The majority of subjects in each group reported no prior treatment experiences (Group 1, 63 percent; Group 2, 66 percent-Group 3, 72 percent).

Table 2 presents an overview of the number of withdrawal symptoms experienced by subjects in each of the three detoxification groups for day #1, the end of weeks 1, 2, and 3, and the last

reported number of symptoms. The findings indicate a greater reduction in symptoms among ascorbic acid subjects in Groups 1 and 3, with the

** DATA ON 117 CLIENTS

most dramatic reduction in subjects utilizing the combination approach. It is

interesting to note that while subjects in Group 2 reported only a minimal reduction in withdrawal symptoms from taking symptomatic medications, these subjects remained in detoxification treatment on the average of 17 days, compared to an average of eight days and 10 days for Groups 1 and 3, respectively.

Subjective Data From Clients In Ascorbic Acid Groups 1 and 3

Reported Energy Increase

The majority of subjects utilizing ascorbic acid reported feeling of having increased energy while large amounts of ascorbic acid were used. Subjects reported this effect as neither positive nor negative.

Reported Drug Blockage

Approximately 45 percent of those subjects utilizing ascorbic acid reported having used heroin, methadone, or some other drug while continuing with ascorbic acid doses. A majority (60 percent) reported a definite blockage effect thought to be caused by the ascorbic acid.

Reported Loss of Craving for Drugs

Four of the ascorbic acid subjects (10 percent) reported a loss of "craving" for drugs as a result of continued ascorbic acid ingestion. All four subjects have remained drug free since utilizing the ascorbic acid detoxification method (from two to six months). Loss of craving was not reported by Group 2 (symptomatic medication procedure).

Reported Side Effects

One subject reported slight nausea which necessitated termination of this approach. One subject reported an observable rash after taking initial doses of ascorbic acid, also indicating a termination of this detoxification procedure.

Case Report

P.B., a 27-year-old Black woman with a one-year history of heroin use, currently snorting \$30 per day, chose the ascorbate detoxification program. Her main symptoms during the first several days of treatment were epigastric distress,

frequency of watery diarrhea, restlessness, and insomnia. She continued with the ascorbate program, taking a maintenance dose of 10-12 g ascorbate per day for eight weeks, and remained drug free.

It seems unclear whether or not ascorbate treatment blocked her heroin withdrawal symptoms. However, she did report that she did not have the craving for the drug while taking ascorbate. She was uncomfortable during the first five days of therapy. After the fifth day she improved in general well-being while on ascorbate maintenance and remained drug free.

Results

Although the current pilot study presents only preliminary data with the usual control limitations of an outpatient detoxification setting, the results do offer some noteworthy observations concerning ascorbic acid as a narcotic detoxification alternative. (1) The results obtained suggest that the ascorbic acid procedure is slightly more effective than symptomatic medications in alleviating narcotic withdrawal symptoms. Combined with symptomatic medications, this approach appears to offer more effective withdrawal relief and also a longer detoxification period than ascorbic acid alone. (2) The data presented supports the use of the ascorbic acid procedure in an outpatient setting. Subjects utilizing this approach report a greater reduction in symptoms over a shorter period of time, allowing more treatment time to be spent on clinical issues than with the detoxification phase.

Conclusion

The ascorbic acid procedure offers some distinct advantages to the more commonly used drug detoxification methods of symptomatic medications and methadone. Ascorbic acid and mineral supplements applied to narcotic withdrawal symptoms offers a cost-effective, nontoxic method which can easily lead into nutritional counseling

and other health perspectives once the detoxification phase has been successfully completed.

Perhaps the most noteworthy observation to consider is the acceptance potential of the ascorbic acid detoxification alternative. Of the total number of subjects in the current pilot study, nearly one-fifth chose to utilize a procedure which was entirely new to them. Realizing the seriousness of a longtime drug abuser's fear of experiencing the "sick" of narcotic withdrawal, the number of subjects willing to risk trying a new detoxification alternative seems high indeed. It was apparent that as the current study continued the demand for this procedure grew, indicating an even greater number of subjects as the word spreads of this alternative and its effectiveness. Another factor which could influence patient acceptance to new alternatives is the ineffectiveness of more commonly used detoxification methods.

Patient reports of increased energy and a sense of well-being add to a greater self-esteem in newly detoxified individuals — a factor which outpatient treatment can build on by encouraging the patient to deal more effectively with the home and community environments.

Further research is needed to fully explore this procedure as an effective narcotic detoxification alternative.

Awareness of the necessity for monitored dosages of ascorbic acid and mineral supplements is advised, as well as a clear procedure for all experiments in an outpatient setting.

It is evident that with further more controlled research, the ascorbic acid procedure can be a healthy, cost-effective alternative for the detoxification of narcotic addicts.

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