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A Controlled Study of Lysergide in the Treatment of Alcoholism

I. The Effects on Drinking Behavior[1]

Reginald G. Smart, Thomas Storm
Earle F. W. Baker and Lionel Solursh[2]

NUMEROUS CLINICAL TRIALS have been made with lysergide (LSD) in the treatment of alcoholism (1–5). For the most part, the reports of these trials have claimed that lysergide reduces drinking among alcoholics; the percentage of alcoholics stated to be "improved" or "much improved" after lysergide has ranged from 50 (5) to 94 (1). A recent critique by Smart and Storm (6), however, has pointed out that these claims of success are based on clinical trials which could give no clear indication of the effectiveness of any new treatment. In particular, these trials are characterized by a lack of the very control groups, follow-up procedures, and measures of change which would allow any valid statement about lysergide.[3] Because lysergide is one of

[1] From the Alcoholism and Drug Addiction Research Foundation, 24 Harbord St., Toronto, and the Toronto Western Hospital, Toronto, Canada.

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[2] Respectively, Research Associate, Alcoholism and Drug Addiction Research Foundation; Assistant Professor, Department of Psychology, University of British Columbia; Clinical Teacher, University of Toronto, Department of Psychiatry, and Attending Psychiatrist, Toronto Western Hospital; Research Fellow, University of Toronto, Departments of Psychiatry and Medicine.

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[3] Two reports (2, 4) on the use of lysergide in the treatment of alcoholism have appeared since the review by Smart and Storm was written. They constitute no significant improvement over the earlier reports as they, too, lack proper control groups, clear methods of evaluation, and consistent follow-up procedures. The study by Jensen and Ramsay (2) contains a "control" group which was given such vastly different procedures (individual outpatient therapy) from the lysergide group (long-term inpatient group therapy) that it is uncertain what elements it was to control for.

the few recent developments in the treatment of alcoholism, it was felt that controlled trials are required before its widespread adoption into the treatment armamentarium. Accordingly, the present paper reports the results of a controlled study based on a single lysergide session. Earlier reports (1, 5) have claimed that a single experience with lysergide can result in significant improvement, but this appears to be the first occasion on which a controlled trial was performed. The present paper contains information on the effects of lysergide on a wide range of drinking behaviors, but subsequent reports will be concerned with its effects on social stability (employment and family relationships) and personality development (changes in self-concept, neuroticism, etc.).

Methods

Patients and their Assignment to Treatment Groups

All 30 patients employed in this study were inpatients or day-care patients at the Toronto Clinic of the Alcoholism and Drug Addiction Research Foundation. They all had a long history of excessive and uncontrolled drinking, previous unsuccessful attempts at therapy, and only short periods of abstinence in the year prior to their appearance at the clinic. Their average age was 40 years.

The subjects were volunteers "for the study of a new drug." Since many more patients volunteered than could be accommodated, a group of 30 was chosen at random to represent the total inpatient and day-care population in terms of social and drinking characteristics. Some of those who volunteered were excluded because of major cardiac or hepatic diseases, or because of incipient psychoses, any of which might have been worsened by lysergide. Patients with previous psychoses or previous delirium tremens were not excluded. In addition, 3 patients volunteered originally but withdrew before completion and hence their data have not been used.

The subjects were divided into 3 groups of 10 each. The "lysergide group" received a single 800-μg dose of lysergide in a specially arranged session. The "ephedrine group" received a 60-mg dose of ephedrine sulfate in a similar session. Both of these drug groups were compared with a control group which was exposed to all of the procedures and therapies given to the drug groups except for the drug session. Ephedrine sulfate was used as a control drug for lysergide because it is relatively innocuous, has no therapeutic use in alcoholism, and some of its effects, e.g., nervousness, headache, palpitations, nausea, and vertigo, could be confused with lysergide effects.

Each week one person was selected at random from a list of volunteers. Each patient was then randomly assigned to the drug or control group according to prearranged schedule. Patients assigned to the drug

group were further relegated to the lysergide or ephedrine group in a random order established by our statistical consultant. Neither the investigators nor the hospital or clinic personnel knew which patients in the drug groups received lysergide except as it became apparent during the treatment interview. In 19 out of 20 cases, however, the therapist administering the drugs guessed correctly which drug the patient received. In nearly every case the patient continued to believe that he had received a magic "new drug." Therapists at the clinic where the post-treatment therapy took place were completely "blind" as to which patients received lysergide.

The random assignment of patients to treatment groups appeared to be successful in equalizing the groups before the study began. For example, there were no significant differences between the groups in age, sex composition, education (completed years of school), marital status, occupation or drinking pattern. These similarities provided considerable assurance that the groups were well matched for a number of characteristics known to affect success in therapy. Later analyses will also show that the groups were very similar in a number of drinking history variables.

Treatment Setting

Because the present study examines the effects of the addition of lysergide to an existing treatment for alcoholism, it is necessary to describe this treatment. Published descriptions of this treatment have been made before (7) but a few details are relevant here. All patients were inpatients or day-care patients in a small hospital devoted to alcoholism and drug addiction. As a part of their therapy they attend a series of didactic meetings or group psychotherapy sessions concerned with problems of alcohol use and the motivations for excessive drug use. These sessions are held every morning and afternoon. In addition to these, physio- and occupational therapy facilities are available, together with opportunities for individual casework and psychiatric interviews. In many ways the approach is not too different from that of the original Yale Plan Clinics, except that certain concepts of therapeutic community have been introduced. This has resulted in more patient participation in disciplinary and social functions, and in the breakdown of some of the traditional formalism of such clinics (8). The orientation of the professional staff is to see alcoholism as an illness which can be cured or alleviated by medical and psychiatric treatment and by the patients' efforts at total abstinence. After inpatient and day-care treatment, patients are encouraged to maintain outpatient or social–recreational contacts with the clinic.

Evaluation Procedures Before Drug Administration

A number of psychological tests and questionnaires were administered to all patients to ensure their comparability before treatment and to provide a baseline from which to assess post-treatment improvements. Patients were given a battery of tests including the Maudsley Personality

Inventory, the Haigh–Butler Q Sort, the Rorschach and a shortened form of the Wechsler Adult Intelligence Scale. They were also interviewed as to their marital status, occupational history, education and treatment experiences. In addition, a drinking questionnaire concerned with experience the past year (periods of abstinence, number of drinking occasions and amounts drunk, types of beverage, and occurrence of symptoms associated with alcoholism) was given. All questions were constructed to yield quantifiable answers rather than general impressions. Samples of the drinking questions are shown in Chart 1.

In addition to the tests and questionnaires, a detailed psychiatric examination was made prior to the drug experience by the therapist administering the drug. At this time efforts were made to establish rapport with the therapist and a therapeutic relationship. A psychiatric diagnosis and prognosis was arrived at. All tests, questionnaires and examinations were administered in standardized form to all patients in all the treatment groups.

Administration of Lysergide and Ephedrine

On the day drugs were given patients went to the psychiatric ward of a general hospital (Toronto Western Hospital) in a fasting and drug-free state, except patients receiving phenytoin, who were maintained as usual on this drug or given a 250-mg dose intramuscularly, as an anticonvulsant precaution, shortly after admission to the ward. The patient was placed

CHART 1.—*Selected Questions from the Pre- and Post-Treatment Questionnaire on Drinking and Abstinence*

1. What was your longest period (in weeks) of abstinence in the past year [6 months for post-treatment period]?

2. What other periods (in weeks) of abstinence did you have?

3. How often (times per month) during the past year [6 month post-treatment] did you have one or more drinks?

4. How often (times per month) during the past year [6 month post-treatment] did you get drunk, i.e., drink enough so that your speech and general behavior were definitely affected?

5. How often (frequently, sometimes or never) in the past year [6 month post-treatment] have you done any of the following?

(a) Neglected your meals while drinking. (b) Drunk just for the effect of alcohol. (c) Taken a drink first thing in the morning. (d) Gotten drunk on a working day. (e) Not been able to remember some of the things that happened while you were drinking. (f) Stayed drunk for several days in a row.

6. How much, in the past year, when you were not drinking, did you think about drinking and wish you had a drink? Just on the average.

All the time . . . Every day off and on . . . Several times a week . . . Two or three times per month . . . 1–12 times a year . . . Not at all.

in a single room, attached to the bed by a light but strong (Posey) belt for security. Either 800 μg of lysergide or 60 mg of ephedrine sulfate was administered, double blind according to a prearranged schedule. A particularly large dose of lysergide was used in order to be certain that important effects were not missed by using minimal doses.

After drug administration patients were attended throughout a 3-hour interview by doctor and nurse cotherapists. The three-way psychotherapeutic interview attempted (*1*) to discover an insightful alternative to the patients' habitual anesthetic use of alcohol and (*2*) to define the patients' attitudes in the following areas: (*a*) transference feelings toward doctor and nurse; (*b*) displacement feelings toward the act of drinking; (*c*) child–parent relationship; (*d*) suicidal propensity; (*e*) displacement attitudes toward alcohol; (*f*) genital–sexual and urethral–sexual behavior; and (*g*) coordination between verbal and nonverbal behavior.

All of the therapists had had a long experience with lysergide therapy and had undergone the experience themselves. It is uncertain whether this is essential for best results; Smith's first study (5) was done before he had taken lysergide himself.

After the drug wore off patients were moved to a bed in the regular ward but were kept overnight, sedated with chlorpromazine if necessary, and released to the clinic on the next day. Patients in the control group received all tests and evaluations and had access to the same therapies but did not go to the hospital or receive lysergide or ephedrine.

Whatever insights or understandings the patient gained from the drug session were used in his individual or group psychotherapy meetings. The clinic therapists, however, made no special effort to examine the results of the drug session unless the patient requested it.

Post-Treatment Evaluation and Follow-Up

On the day after the drug session patients in the two drug groups returned to the clinic to complete their inpatient treatment for alcoholism. The average length of stay after the drug session was about 1 week.

All patients were exposed to the same follow-up procedures after their release from the clinic. The follow-up was timed to occur 6 months after the initial evaluation. A 2-week leeway was allowed around this 6-months ideal and special efforts were made to interview and retest patients within these limits. Only 2 patients were not seen within these limits and these were both seen within 8 months after their initial testing. The follow-up was completely successful in that all 30 patients were seen. During the follow-up patients were contacted by the same research assistant so that interexaminer biases were controlled.[4] The same tests and drinking questionnaire used in the pretreatment evaluation were administered during follow-up except that information on drinking was sought for the period since the last testing. Two patients

[4] The success of this follow-up was due primarily to the efforts of Richard Bennett who conducted all of the follow-up interviews but one.

died during the period covered by the study but both died after their follow-ups had been completed.

There was also a further therapeutic interview (about 4 days after the lysergide session) with the therapist who had administered the drug to discuss and clarify the insight and feelings developed during the drug session. Other than this post-treatment interview, responsibility for using the lysergide experience in treatment rested with the clinic therapists who afterward discussed this experience with the patients.

Effectiveness of Controls and Double-Blind Procedures

The validity of a study such as this turns on the effectiveness of the control procedures and on the degree of blindness achieved. At the outset, it was hoped that none of the patients would be aware that lysergide was being used, and communications with them referred only to a "new drug" study. However, publicity in newspapers and other media convinced many patients that lysergide was being used although this was not clarified by the clinical staff. Patients were unaware that two drugs were being used and they had no way of knowing which patients received lysergide. They were told that there is a great variation in how people react to the drug, that some react in a striking way and others only slightly. This appeared to create an effective blind condition so far as the patients were concerned. Patients who got ephedrine interpreted it as a slight reaction to lysergide. Both staff and patients knew which patients were in the control group and receiving no drug, but they were not aware of which drug was given in a particular instance. Thus, complete double blindness was not achieved but a modified sort of single blindness was.

Further efforts to control biases due to expectation or suggestion were associated with the conditions for follow-up and data analysis. The follow-up worker did not know, at any time, which patients received the various treatments, and all ratings, measurements and final analyses were completed before the drug code was broken.

Results

Because the same information about drinking was sought for the pretreatment periods the major results are concerned with differences in drinking during these periods. Table 1 shows the age, sex, number of years at school and employment of each patient when admitted to the clinic; there are no group differences in these variables. Table 1 also shows the percentage gain in weeks of longest abstinence and the percentage gain in total weeks of abstinence in the post-treatment period. These results were arrived at by expressing the number of weeks in the longest abstinence and in the total period of abstinence as percentages of the total number of weeks

TABLE 1.—*Patient Characteristics and Percentage Gain in Abstinence in Post-Treatment over Pretreatment Period*

Age (years)	*Sex*	*Marital Status**	*Years of School*	*Employment†*	*Psychiatric Diagnosis*	*% Gain in Abstinence*
		LYSERGIDE GROUP				
59	M	Sep.	12	E	Passive–Aggressive	−11.5
36	M	S	9	U	Passive–Aggressive	63.5
38	M	M	8	U	Passive–Aggressive	90.4
30	M	M	9	U	Passive–Aggressive	7.7
47	M	M	10	U	Chronic Anxiety; Depressive neuroses	7.7
26	M	S	10.5	U	Paranoid	61.5
27	M	S	17	U	Compulsive; Organic brain syndrome	−5.8
47	M	D	10	U	Pseudoneurotic schizophrenia	59.7
50	M	Sep.	11.5	U	Passive–Aggressive	50.0
31	F	Sep.	9	Hw	Compulsive; with depression	13.5
		EPHEDRINE GROUP				
49	M	M	8	E	Passive–Aggressive	34.6
33	M	M	16	U	Passive–Aggressive	63.5
45	M	M	19	E	Paranoid	23.1
44	M	M	10.5	E	Passive–Aggressive	1.9
37	M	Sep.	12	E	Passive–Aggressive	7.7
35	M	Sep.	6	E	Passive–Dependent	50.0
35	M	M	10	U	Obsessive–Compulsive	53.8
48	M	Sep.	16	U	Obsessive–Compulsive	0.0
38	M	C.L.	12	U	Passive–Aggressive	3.9
28	M	S	10	E	Compulsive; Chronic anxiety state	76.9
		CONTROL GROUP				
43	M	D	15	U	Obsessive	69.2
57	M	M	7	U	Chronic depression; Borderline IQ	69.3
29	M	Sep.	7	U	Passive–Aggressive	−57.7
40	M	S	17	E	Compulsive	100.0
43	M	M	6	U	Compulsive; Epilepsy	13.4
37	M	S	17	E	Manic–Depressive	−76.9
42	M	D	16	E	Immature	11.6
33	M	M	10	E	Immature	− 7.7
39	M	M	12	U	Passive–Aggressive	63.5
45	F	C.L.	8	Hw	Chronic depression; Borderline IQ	11.5

* D = divorced, S = single, Sep. = separated, M = married, C.L. = common law.
† E = employed, U = unemployed, Hw = housewife.

in the pre- and post-treatment periods. Simple inspection indicates a substantial gain in abstinence in all three groups, with average gains of 33.7% (lysergide), 31.5% (ephedrine) and 19.6% (control). Simple analyses of variance, however, showed no differences between the lysergide, ephedrine and control groups in percentage gain in total abstinence ($F = 0.323$, $p>.05$) or in their longest period of abstinence ($F = 0.463$, $p>.05$).

Aside from increasing periods of abstinence it was felt that lysergide might reduce the actual number of drinking occasions. Accordingly, the answers to the question on number of drinking occasions (Question 3, Chart 1) were analyzed for group differences. The average number of times per month the groups had one or more drinks in the pretreatment period was 13.9 (lysergide), 23.2 (ephedrine), 19.4 (control), and in the post-treatment period 5.3, 11.4, and 7.3, respectively. An analysis of variance performed on the pre- and post-treatment data showed no significant differences between the groups (Table 2). This result indicates that the three groups were well matched in extent of drinking in the pretreatment period. The lack of group differences in the post-treatment period indicates no significant effect of lysergide on number of drinking occasions.

Similar results were also obtained for the number of occasions per month on which the patients became drunk (Question 4, Chart 1). Patients in the three groups became drunk on 5.5 (lysergide), 2.6

TABLE 2.—*Analyses of Variance for Differences in Number of Drinking Occasions and Drunkenness Occasions between Three Treatment Groups during Pre- and Post-Treatment Periods*

Source	*df*	*MS*	*F*	*P*
Drinking Occasions				
Periods (P)	1	1760.4	18.6	<.001
Groups (G)	2	296.6	3.14	>.05
P × G	2	18.8	0.20	>.05
Error	54	94.4		
Total	59			
Drunkenness Occasions				
Periods	1	238.1	5.30	<.05
Groups	2	117.9	2.63	>.05
P × G	2	46.5	1.0	>.05
Error	54	44.9		
Total	59			

(ephedrine), and 11.1 (control) occasions per month in the pre-treatment period and on 3.1, 2.5, and 3.4 occasions in the post-treatment period. A variance analysis on these data (Table 2) showed a significant reduction in the number of drunkenness occasions in the post-treatment period for the three groups combined. But, again, there were no differences between treatment groups and no differential effect of lysergide.

The effects of the various treatments on a number of alcoholic symptoms were also investigated. These symptoms (Questions 5 and 6 of Chart 1) cover such behaviors as increasing preoccupation with drinking, neglecting meals, drinking only for the effect of alcohol, morning drinking, getting drunk on a working day, blackouts and going on binges. In order to assess changes in these behaviors the numbers of patients answering "frequently," "sometimes," and "never" to each question were determined for the pre- and post-treatment periods separately. Changes were then recorded by counting the number of patients who reported that a behavior changed from "frequently" to "sometimes" or "never" and from "sometimes" to "never." Patients whose symptoms increased or remained the same were also counted. Chi-square analyses (2×3) were made to determine whether the three groups differed in that more patients in some groups experienced a reduction in each symptom. All of these analyses were nonsignificant in outcome and hence lysergide did not seem to reduce the reported frequency of symptoms such as morning drinking, getting drunk on a working day, having blackouts, being preoccupied with alcohol, neglecting meals and drinking only for the effects of alcohol.

It was also thought that lysergide, even if it did not directly reduce drinking or drunkenness, might facilitate therapy by helping patients to establish a closer contact with the clinic. Accordingly, the total number of voluntary contacts which each patient had with the clinic were counted for the pre- and post-treatment periods separately. The number during the pretreatment period were 8.0 (lysergide), 6.0 (ephedrine), and 6.7 (control), and 5.6, 5.9 and 4.3 during the post-treatment period. Simple analysis of variance revealed no significant differences ($F = 0.081$, $p>.05$ and $F = 0.135$, $p>.05$ respectively). This indicates that the groups were well balanced in terms of their pretreatment involvement in therapy. It is also clear that lysergide did not increase the alcoholics' involvement in therapy as indicated by frequency of therapeutic contact.

Collateral information on drinking in the post-treatment period was available from friends, relatives or from the therapists of most patients. In all cases where this was available correspondence with the patient's information was very good. Similar correlations reported by O'Reilly and Funk (4) also lend support to the reliability of patient statements about abstinence.

It should be noted that some patients in all three groups improved markedly, including several in the lysergide group. Attempts made by the therapists administering the lysergide to prognosticate improvement in drinking on the basis of information in the lysergide interview were no better than chance. In retrospect, however, three factors appear to differentiate the patients in the lysergide group who gained in abstinence from those who did not. Under lysergide, patients who did not gain in abstinence had expressed ambivalent (love–hate) feelings toward the nurse, expressed suicidal wishes, and showed obvious lack of correlation between verbal and nonverbal behavior. In contrast, the group which did gain in abstinence showed clear-cut feelings, either positive or negative, toward doctor or nurse, all wanted to live, and showed a good correlation between verbal and nonverbal behavior. A further and more extensive study would be required to confirm these tentative findings.

Discussion

The present study failed to show that lysergide is a useful adjunct to psychiatric treatment for alcoholism. The lysergide group did not differ from the others in gain in total abstinence or in their longest period of abstinence, nor did they have fewer post-treatment occasions on which drinking or drunkenness occurred. Further, lysergide did not seem to reduce or eliminate symptoms such as morning drinking, getting drunk on working days, blackouts, preoccupation with alcohol, neglect of meals, or drinking only for the effects of alcohol. Nor did lysergide seem to increase the alcoholics' involvement in therapy.

The results of the present study contradict the impressions of such investigators as Chwelos et al. (1), Smith (5), and MacLean et al. (3) who reported that lysergide resulted in 50 to 94% of their patients being "improved" or "much improved" at the time of follow-up. The limitations of these studies have been briefly described above and in a longer discussion by Smart and Storm (6).

All of the earlier investigators examined lysergide as an adjunct to some other form of treatment such as group psychotherapy (3) or psychiatric treatment (5). The results of the present study, in a way, confirm these earlier reports in that 8 of the 10 patients could be listed as "improved" or "much improved" in terms of increased abstinence and decreased drunkenness. But in the present study the improvement could not be attributed to the use of lysergide since the ephedrine and control groups showed comparable improvement. An important fact here is that the earlier studies failed to use any nonlysergide control groups with which the effects of lysergide could be compared. If the earlier findings of an important lysergide effect were due solely to the lack of controls it would not be the first time in which controlled studies have shown effects very different from those of uncontrolled studies. For example, Glick and Margolis (9), after a review of the literature on chlorpromazine, found that double-blind controlled studies yielded significantly fewer positive results than did nonblind uncontrolled studies; and Greiner et al. (10) showed that khellin, a drug for angina pectoris, had better effects than placebos in single-blind but not in double-blind trials.

A number of factors could lead to spurious negative results for lysergide. One of these is the small number of patients used—only 10 in each group. But in previous reports the effectiveness of lysergide was so striking that 10 subjects should have demonstrated them. Studies involving follow-up are costly, time-consuming and difficult to execute so that the use of large numbers of patients has often resulted in less intensive work being done with them and in faulty data. For example, in Jensen and Ramsay's study (2) large numbers of patients were used ($N = 70$ and 55 in lysergide and control groups) but almost 50% of the patients in the control group were lost to follow-up. The position is taken here that a controlled study with a small number of carefully studied patients is preferable to one loosely controlled and less intensive. Perhaps a series of lysergide treatments would have resulted in more positive results, but earlier studies (1, 5) reported beneficial effects with one lysergide experience.

Negative results might also have been obtained because of a myriad of details associated with the personnel and facilities involved. An impression gained from some earlier reports is that the trials were carried out by personnel committed to a belief in the

value of lysergide, or at least convinced that earlier papers had demonstrated some value. In the present study, the investigators were skeptical about its value and no one was committed to a belief in its efficacy. The role of the therapists' conviction and personal commitment to a treatment approach has rarely been investigated as a factor in its success but it might well be important.

The role of the method of lysergide administration should also be taken into account. Some workers (1) have used music, visual stimuli such as pictures of relatives, cut flowers, and lists of questions about personal problems during the treatment session. None of these were used in the present study. Their role has never been assessed but it might well be important. Numerous other procedural details might also be crucially important to the lysergide effect found in earlier studies, but they require controlled evaluation before their importance can be established. It is also worth noting that the lysergide therapy was just as effective here as in earlier studies with 8 out of 10 patients improved or much improved; but it was not more effective than treatment without lysergide. Whether the refinements used by Chwelos et al. (1) would have raised the improvement rate even higher than 8 out of 10 is debatable.

The results reported do not preclude the possibility of finding some effects of lysergide on drinking, given some very different procedures or personnel. They demonstrate, however, that such effects are not associated solely with its pharmacological properties or with the procedures used here. Nevertheless, no valid claim for any effects can be made until the treatment procedures have been in a controlled study similar to the one reported here.

Subsequent reports will deal with the effects of lysergide on personality variables (Rorschach, self and ideal concepts, and neuroticism) and on social stability (e.g., marital and family relations, employment). It may be that lysergide has no significant effects on drinking behavior but has marked beneficial effects on the personality and social stability of alcoholics.

In conclusion, it should be noted that there are a number of important similarities between this study and earlier studies of lysergide and alcoholism. The patients used were similar in background and pathology, and the treatment milieus seem to be similar in that most involved inpatient facilities for alcoholics. The 800-μg dose has been used with alcoholics before but it is larger than the dose usually employed. Thus, lysergide was given ample oppor-

tunity to show its effectiveness. The similarities between this and previous studies support the suggestion that the controlled conditions of the present study were a major factor in producing the negative results.

Abstract

To investigate the effects of lysergide treatment on the drinking behavior of alcoholics, 30 alcoholics (2 women), aged between 26 and 50 years (average 40), all with a long history of excessive drinking and previous unsuccessful attempts at therapy, were randomly selected from the inpatient facility of the Toronto clinic of the Alcoholism and Drug Addiction Research Foundation of Ontario. They were divided into 3 groups: 10 received a single 800-μg dose of lysergide before an investigative and therapeutic interview, 10 received 60 mg of ephedrine sulfate before a similar interview and 10 received no drug. All patients were given psychiatric interviews, psychological tests and a drinking behavior questionnaire prior to the study and again in a follow-up 6 months later. All patients took part in the general treatment program of the clinic, which included group, physio- and occupational therapy and individual casework and psychiatric interviews. The average length of stay after the drug session was 1 week. Assignment to groups was made so that the patients, the therapists and the follow-up workers were unaware which drug was given; however, the therapist giving the drugs guessed correctly in 19 out of 20 cases. Thus, this was a modified single-blind study.

All three groups showed an improvement at the 6-month follow-up, but with no significant intergroup differences. The gain in abstinence time in the lysergide, ephedrine and control groups, respectively, was 34%, 32% and 20%; the number of times patients had one or more drinks pretreatment was 14, 23 and 19, and post-treatment, 5, 11 and 7; the number of times patients got drunk pretreatment was 6, 3 and 11, and post-treatment, 3, 3 and 3. No significant intergroup differences were found in the following alcoholic symptoms: morning drinking, blackouts, drinking on job, or preoccupation with alcohol.

It is concluded that lysergide, as used in the present study, failed as an effective adjunct to psychotherapy, in contrast to the claims made in previous studies. It is suggested that the discrepancy with the earlier reports can be explained by the controlled nature of the present study and possibly by such factors as the personnel and facilities employed or details of procedure.

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