A New Adjunct to the Treatment of Alcoholism: The Hallucinogenic Drugs

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INTRODUCTION

EVALUATION of the results of treatment in alcoholism is difficult. Among the reasons are diagnostic problems, difficulties of obtaining accurate follow-up data, countertransference problems, and the varied etiological and prognostic factors in alcoholism which make different samples differ greatly. The problem is not insuperable, however, and through Alcoholics Anonymous, for example, it is often possible to obtain reliable histories and follow-up data.

The present study describes a preliminary attempt to evaluate two hallucinogens in the treatment of a group of particularly refractory alcoholics.

Use of Hallucinogens

In a sample of 24 patients, LSD-25 (d-lysergic acid diethylamide) and mescaline were used as adjuncts to treatment consisting of superficial psychotherapy supplemented by occupational and recreational therapy. A number of observers including Busch and Johnson (1), Sandison and his co-workers (2, 3, 4), Denber and Merlis (5), Frederking (6), Benedetti (7) and Abramson (8) have commented on the value of these drugs when used as part of a psy-

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2 Deputy Director, Psychiatric Research, Department of Public Health, University Hospital, Saskatoon, Saskatchewan.
chotherapeutic program. Osmond and Hubbard had indicated in personal communications that they found these drugs useful in alcoholism and it was decided to carry out this pilot study.

The hallucinogens often produce, in addition to perceptual disturbances, a particularly vivid and intense awareness of personality problems. It was felt that these experiences might be utilized as part of a therapeutic program. The experience of "hitting bottom" has been much discussed in the A.A. literature. It is at this time that the alcoholic is often susceptible to therapy. It was thought that these drugs might make the patient "hit bottom" artificially and thereby render him more amenable to psychotherapy. They certainly produce in some subjects experiences somewhat similar to the conversion phenomena described by James (9) or the state of "self surrender" by Tiebout (10). In other respects, the drugs produce effects resembling those of delirium tremens, which can certainly occur many times in the life of an alcoholic without apparent therapeutic benefit. However, delirium tremens usually occurs in a state of confusion in alcoholics with long-established drinking patterns and in the most unfavorable social circumstances.

METHOD

In the present study, an attempt was made to enter into a psychotherapeutic relationship with the patient and to delineate the main problems. This phase lasted 2 to 4 weeks. As might be expected, the building up of adequate rapport was of critical importance during this period and on it largely depended the success or failure of the next phase. The patients were next given a single dose of LSD or mescaline orally while in hospital. Early in the study, it was noted that alcoholics tend to be resistant to these drugs and doses of 200 to 400 micrograms of LSD or 0.5 g. of mescaline were used. A prolonged interview was carried out with the patient, who was never left alone while under the influence of the drug. In addition to discussing with the patient problems leading to and arising out of his drinking, strong suggestions were made to the effect that he discontinue the use of alcohol. No attempt was made to arouse fear. The material which emerged was discussed during the next few days and the patient was discharged. In some cases, follow-up psychotherapy was possible; in most, however, further contact was made through A.A., which provided much valuable and objective information. Disulfiram was not employed in the study, nor were tranquilizers.

*Dr. H. F. Osmond, Superintendent of the Saskatchewan Hospital, Weyburn, Canada; A. M. Hubbard, Ph.D., Vancouver, Canada.
The Sample

Only the most difficult cases were taken into this study. All but four of the patients had tried A.A. and were considered to have failed the program there. The main descriptive characteristics of the group are shown in Table 1.

Eight patients had experienced typical delirium tremens while other complications of alcoholism were present in all but two cases. The clinical diagnoses were: character disorder, 8 cases; psychopathy, 12 cases; borderline or actual psychoses, 4 cases. The average period of uncontrolled drinking was 12.1 years.

The group was an extremely unfavorable one prognostically, as can be seen from the frequency of unfavorable diagnostic categories, the lack of response to previous treatment, and the frequency of complications.

RESULTS

A follow-up investigation was carried out on all the patients for periods ranging from 2 months to 3 years. The average duration of the follow-up was 1 year. The help of A.A. proved invaluable in this process.

The results of treatment were classified as follows:

*Much improved:* complete abstinence or drinking only very small quantities.
*Improved:* definite reduction in alcohol intake. Other observers confirm that a substantial improvement in drinking habits has occurred.
*Unchanged:* no fundamental change in drinking pattern. Cases showing a temporary improvement were included in this group.

None of the patients followed up became worse.

The effects of treatment are summarized in the right-hand portion of Table 1. The effects of the drugs have been classified as mild, moderate, or intense according to the severity of the reaction. Cases 9 and 11 showed no reaction beyond some slight increase in tension. These results have been summarized in terms of diagnostic groupings in Table 2.

The term "character disorder" is used to indicate those patients who exhibited chronic interpersonal difficulties arising on a neurotic basis. It can be seen from Table 2 that this group responded best to the treatment. The results in psychopathy are not unimpressive, in view of the great difficulties in treating patients of this type. In the one patient with psychosis (a manic-depressive) who improved after treatment, mescaline (0.5 g.) produced a reaction indistinguishable from a manic-depressive depression. This patient
### Table 1.—Effects of Treatment with Hallucinogenic Drugs in 24 Alcoholics

<table>
<thead>
<tr>
<th>No.</th>
<th>Sex</th>
<th>Age</th>
<th>Years of Uncontrolled Drinking</th>
<th>Complications</th>
<th>Diagnosis</th>
<th>Drug</th>
<th>Intensity of Reaction</th>
<th>Duration of Follow-up</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M</td>
<td>30</td>
<td>3</td>
<td>Nil</td>
<td>Character disorder</td>
<td>LSD, 200 gamma</td>
<td>Moderate</td>
<td>2 years</td>
<td>Improved</td>
</tr>
<tr>
<td>2</td>
<td>M</td>
<td>30</td>
<td>11</td>
<td>Nil</td>
<td>Character disorder</td>
<td>Mescaline, 0.5 g.</td>
<td>Intense</td>
<td>2 years</td>
<td>Much improved</td>
</tr>
<tr>
<td>3</td>
<td>M</td>
<td>45</td>
<td>17</td>
<td>At least 3 attacks of delirium tremens</td>
<td>Character disorder</td>
<td>LSD, 200 gamma</td>
<td>Moderate</td>
<td>2 years</td>
<td>Improved</td>
</tr>
<tr>
<td>4</td>
<td>M</td>
<td>51</td>
<td>2</td>
<td>Peripheral neuropathy</td>
<td>Involutional depression, paranoid features</td>
<td>Mescaline, 0.5 g.</td>
<td>Intense</td>
<td>3 months</td>
<td>No change</td>
</tr>
<tr>
<td>5</td>
<td>M</td>
<td>51</td>
<td>20+</td>
<td>Blackouts</td>
<td>Manic-depressive depression</td>
<td>Mescaline, 0.5 g.</td>
<td>Intense</td>
<td>18 months</td>
<td>Improved</td>
</tr>
<tr>
<td>6</td>
<td>M</td>
<td>57</td>
<td>35</td>
<td>Several attacks of delirium tremens since 1934; blackouts; over 100 arrests, drunkenness</td>
<td>Psychopathy</td>
<td>LSD, 300 gamma</td>
<td>Moderate</td>
<td>1 year</td>
<td>Unchanged</td>
</tr>
<tr>
<td>7</td>
<td>M</td>
<td>48</td>
<td>17</td>
<td>Barbiturate addiction</td>
<td>Character disorder</td>
<td>LSD, 200 gamma</td>
<td>Moderate</td>
<td>10 months</td>
<td>Unchanged</td>
</tr>
<tr>
<td>No.</td>
<td>Sex</td>
<td>Age</td>
<td>Drinking</td>
<td>Years of Uncontrolled Drinking</td>
<td>Complications</td>
<td>Diagnosis</td>
<td>Drug</td>
<td>Intensity of Reaction</td>
<td>Duration of Follow-up</td>
</tr>
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<tr>
<td>8</td>
<td>M</td>
<td>38</td>
<td>16</td>
<td>16</td>
<td>Delirium trem; blackouts; cirrhosis of liver</td>
<td>Psychopathy</td>
<td>LSD, 200 gamma; Sept. '58; 300 gamma, Dec. '56</td>
<td>Moderate</td>
<td>1 year</td>
</tr>
<tr>
<td>9</td>
<td>M</td>
<td>28</td>
<td>1½</td>
<td>Delirium tremens</td>
<td>Psychopathy</td>
<td>Mescaline, 0.5 g.</td>
<td>Moderate</td>
<td>No reaction</td>
<td>2 months</td>
</tr>
<tr>
<td>10</td>
<td>M</td>
<td>28</td>
<td>8</td>
<td>Delirium tremens; hepatitis</td>
<td>Character disorder</td>
<td>Mescaline, 0.5 g.</td>
<td>Mild</td>
<td>16 months</td>
<td>Improved</td>
</tr>
<tr>
<td>11</td>
<td>M</td>
<td>33</td>
<td>11</td>
<td>Blackouts</td>
<td>Psychopathy</td>
<td>LSD, 300 gamma</td>
<td>No reaction</td>
<td>6 months</td>
<td>Unchanged</td>
</tr>
<tr>
<td>12</td>
<td>M</td>
<td>30</td>
<td>10</td>
<td>Blackouts</td>
<td>Psychopathy</td>
<td>Mescaline, 0.5 g.</td>
<td>Intense</td>
<td>20 months</td>
<td>Much improved</td>
</tr>
<tr>
<td>13</td>
<td>M</td>
<td>36</td>
<td>10</td>
<td>Blackouts</td>
<td>Psychopathy</td>
<td>LSD, 200 gamma</td>
<td>Mild</td>
<td>8 months</td>
<td>Unchanged</td>
</tr>
<tr>
<td>14</td>
<td>M</td>
<td>33</td>
<td>15</td>
<td>Blackouts; borderline delirium tremens</td>
<td>Psychopathy</td>
<td>LSD, 200 gamma; LSD, 400 gamma</td>
<td>Mild</td>
<td>18 months</td>
<td>Much improved</td>
</tr>
<tr>
<td>15</td>
<td>M</td>
<td>28</td>
<td>6</td>
<td>Blackouts</td>
<td>Psychopathy</td>
<td>LSD, 200 gamma</td>
<td>Intense</td>
<td>Moderate</td>
<td>15 months</td>
</tr>
<tr>
<td>No.</td>
<td>Sex</td>
<td>Age</td>
<td>Blackouts</td>
<td>Diagnosis</td>
<td>Drug</td>
<td>Dose</td>
<td>Reaction</td>
<td>Length</td>
<td>Outcome</td>
</tr>
<tr>
<td>-----</td>
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<tr>
<td>16</td>
<td>F</td>
<td>20</td>
<td>5</td>
<td>Blackouts; recurrent hallucinatory episodes; promiscuity</td>
<td>Psychopathy</td>
<td>LSD, 200 gamma</td>
<td>July '56; May '57</td>
<td>Intense</td>
<td>18 months</td>
</tr>
<tr>
<td>17</td>
<td>M</td>
<td>36</td>
<td>10</td>
<td>Blackouts</td>
<td>Schizoid personality</td>
<td>LSD, 300 gamma</td>
<td>Intense</td>
<td>1 year</td>
<td>Unchanged</td>
</tr>
<tr>
<td>18</td>
<td>M</td>
<td>63</td>
<td>20</td>
<td>Depression; blackouts</td>
<td>Character disorder</td>
<td>Mescaline, 0.5 g.</td>
<td>Intense</td>
<td>1 year</td>
<td>Much improved</td>
</tr>
<tr>
<td>19</td>
<td>M</td>
<td>52</td>
<td>9</td>
<td>Blackouts</td>
<td>Character disorder</td>
<td>LSD, 300 gamma</td>
<td>Intense</td>
<td>9 months</td>
<td>Much improved</td>
</tr>
<tr>
<td>20</td>
<td>M</td>
<td>35</td>
<td>15</td>
<td>Delirium tremens; blackouts; drug addiction</td>
<td>Probably simple schizophrenia</td>
<td>LSD, 200 gamma</td>
<td>Mild</td>
<td>1 year</td>
<td>Unchanged</td>
</tr>
<tr>
<td>21</td>
<td>M</td>
<td>30</td>
<td>7</td>
<td>Blackouts</td>
<td>Psychopathy</td>
<td>LSD, 200 gamma</td>
<td>Moderate</td>
<td>4 months</td>
<td>Unchanged</td>
</tr>
<tr>
<td>22</td>
<td>M</td>
<td>25</td>
<td>3</td>
<td>Blackouts; antisocial acts; stealing, etc.</td>
<td>Psychopathy</td>
<td>LSD, 200 gamma; mescaline, 0.5 g.</td>
<td>Mild</td>
<td>4 months</td>
<td>Unchanged</td>
</tr>
<tr>
<td>23</td>
<td>M</td>
<td>53</td>
<td>30</td>
<td>Blackouts; delirium tremens; antisocial acts: jailed 48 times</td>
<td>Psychopathy</td>
<td>LSD, 200 gamma</td>
<td>Intense</td>
<td>Moderate</td>
<td>Improved</td>
</tr>
<tr>
<td>24</td>
<td>M</td>
<td>42</td>
<td>10</td>
<td>Blackouts</td>
<td>Character disorder</td>
<td>LSD, 200 gamma; LSD, 300 gamma</td>
<td>Mild</td>
<td>2 months</td>
<td>Much improved</td>
</tr>
</tbody>
</table>
was also treated by electroconvulsive therapy and it is difficult to know whether the mescaline produced any real benefit (although the patient maintained that it did).

Side Effects

Many patients noticed a transient nausea ½ to 2 hours after taking either drug. Three patients vomited, though not severely. The psychological effects varied greatly in quality and in intensity and persisted for an average of 8 or 9 hours. In all cases, the patients felt well by the following day.

Some of the patients showed mild abnormalities of the liver function tests. Case 8 had a definite cirrhosis of liver; case 10 had a history of hepatitis a few weeks previously. Yet these patients did not show an enhanced reaction to the drugs as has been previously reported (11). Indeed, case 10 showed only a very mild reaction. Case 8, who had a high glucose tolerance curve, was given 100 g. of glucose to see whether this would ameliorate the LSD reaction as suggested by Mayer-Gross, McAdam and Walker (12); the glucose had no apparent effect although the blood glucose reached 276 mg. per 100 ml.

Examples of the Treatment Process

Two examples will be given each of patients who responded and failed to respond.

Case 17. This 36-year-old man of Italian origin had been drinking heavily since 1943. Soon his drinking became uncontrollable. Before admission, he had been consuming 40 oz. of rye whisky per day. He has experienced blackouts but not delirium tremens.

He grew up in a background of family dissension. Both parents were strict and showed him little affection. They did, however, inculcate in him a strong fear of doing wrong, especially in the sexual sense. He had never felt adequate as a man and had never been able to have a...
real friendship with a woman. He had had intercourse with a number of women whom he called "scum of the earth." He was constantly reproached by his parents for his excessive drinking and wished to leave home but was unable to summon the resolution to do so. He became shy, self-conscious, extremely tense and solitary; he admitted having suicidal thoughts. He was regarded as a schizoid personality bordering on psychosis.

Following 300 gamma of LSD, he complained of an overpowering sense of tension. He developed many perceptual disturbances and expressed tremendous anxiety concerning them. He discussed many incidents from his past and said he expected retribution. Depression became extreme and he said, "Everything is so hopeless, a big burden, your soul has to unload." Two hours after the LSD was given, his tension and depression were so marked that sodium seconal (gr. 1½) was administered. There was some relief of the tension but the depression persisted and it was difficult to enter into a therapeutic relationship with him. A few days later he was observed to be smelling of alcohol on the ward. He promptly resumed drinking after discharge and was still doing so at follow-up a year later. Result: unchanged.

Case 20. This 35-year-old dentist had been drinking heavily since adolescence. Since World War II, his drinking has been steady and uncontrollable. He had been unable to work for several years (because of alcoholism) but lived on a pension. He drank rubbing alcohol and was suspected of being a drug addict. Although he showed many features of psychopathy—lack of responsibility, impulsiveness, inability to tolerate stress, and lack of consideration for others—it was noted that his affect was extremely shallow and his thinking disconnected, and that he remained solitary and aloof from others. It was suspected that he was a chronic schizophrenic of the simple type but psychopathy could not be entirely ruled out.

He showed little response to 200 gamma of LSD. One hour after receiving the drug he appeared quite cheerful and was playing cribbage. During the next hour he complained of "feeling jittery" and of some perceptual distortions but they were slight. He remained negativistic and uncommunicative. Later he complained of some nausea and depression.

A few days later he was discovered to have hidden rubbing alcohol in his room. After he was discharged his drinking patterns continued as before. Result: unchanged.

Case 3. This 45-year-old grocer said he had been drinking uncontrollably for about 17 years but he had had his first attack of delirium tremens in 1942 and the alcohol-drinking period may have been longer. His mother was strict and religious, his father an alcoholic; he felt close to neither. He left home when he was 16, worked in odd jobs on fairgrounds, etc., had numerous casual relationships with women but formed no lasting friendships. His marriage in 1936 was not a success. Eventu-
ally he discovered that his wife was unfaithful to him and he left her. He had delirium tremens at least three times and was in a mild attack on admission.

He was given 200 gamma of LSD and had a moderate reaction. He recalled many traumatic incidents from the past and remarked, "I'm just a burglar and a con man." He appeared to experience real remorse. He remembered wishing that his mother might die and recalled competitive feelings toward his brother. He discussed his ambivalent feelings toward women, which stemmed from his traumatic experiences. This and other material was used in subsequent interviews.

He had two brief relapses about 3 months after leaving the hospital but since then has been completely abstinent. Two years later he is operating his own shop, appears to be making a good adjustment and is active in A.A. Result: improved.

Case 19. This 52-year-old salesman started drinking when he was 18 but it did not become a serious problem till 9 years ago. His intelligence was in the low normal range and he gave a long history of interpersonal difficulties. His father left for World War I when the patient was 9; he was subsequently killed. The patient became dependent on his mother and did not adapt well to her second marriage when he was 14. He had many neuropathic traits including sleepwalking and persistent nightmares. He married but could not get along with his wife who, he said, had been unfaithful to him; consequently they separated.

He had never stopped drinking for any length of time in the last few years despite contact with A.A. In addition, he was irritable and given to fantastic tales of a compensatory character.

He was given 300 gamma of LSD and had vivid perceptual disturbances. He said, "This treatment has brought back many thoughts. When I think of it, what a fool I made of myself these last 22 to 23 years... I wanted to stop drinking for a long time, but it's lack of will-power. I started drinking at 18. My stepfather was a heavy drinker. I drank to get even for I felt the more we had the less he had." He displayed apparent earnestness when he said, "This is an experience worth going through. I feel I can stay away from alcohol now."

He has in fact been completely abstinent for the follow-up period of 9 months. Result: much improved.

DISCUSSION

It is impossible to assess the contribution made by the drugs separately from the whole treatment regimen. This preliminary study was not designed to do this. However, the impression was gained that the drugs are a useful adjunct to psychotherapy. It must be emphasized that they are only part of the treatment program. They would almost certainly be valueless without psycho-
therapy and rehabilitative measures. The impression was also gained that these drugs are of little value to borderline or actual psychotics and it would probably be wise to exclude this group. The best results were obtained in the group of character disorders and it is likely that the results would have been better if less refractory cases had been chosen.

In general, those patients who had an intense reaction did better than those having a mild one, but this statement requires some qualification. In cases where severe anxiety was aroused and communication blocked, the result was seldom good. Cases 4, 16 and 17 were of this type. No attempt was made to produce fear during the interviews; instead an attempt was made to promote a more vivid awareness of interpersonal difficulties and their bases.

The attitude of the therapist is another important variable in the treatment. This method as described probably lends itself best to a technique of exhortation, persuasion and suggestion which may not come easily to all therapists (as it certainly did not to the present one). It must be admitted, however, that therapies which avoid these techniques and concentrate on providing insight have not been brilliantly successful in alcoholism. Moreover, many of these patients did, in fact, seem to gain an enhanced self-understanding as a result of the experience and this appeared to influence their subsequent behavior.

I believe that contact between the therapist and the patient can be improved if the therapist has taken the drug himself. Unfortunately, I did not do this until the present series was completed. Since then, I believe that my capacity to empathize with these patients has been much enhanced.

In view of the refractory nature of the group, the results appear sufficiently encouraging to merit more extensive and preferably controlled trials. Modifications of the technique might also produce improvements, e.g., giving the subjects some alcohol during the experience or using small dosages of the drugs as an adjunct to psychotherapy.

A final observation of some interest is the fact that the group tended to be remarkably resistant to these drugs. In normal subjects 100 gamma of LSD is sufficient to provoke a profound reaction in 80 per cent of cases, 200 gamma in all cases;4 in these patients, 200 to 400 gamma of LSD were used to obtain comparable results.

4A. Hofler. [Personal communication; 1958.]
Mescaline, on the whole, appeared to produce the more marked reactions, though cases 9 and 10 were exceptions. Resistance of psychopaths and alcoholics to LSD has been noted previously (13–16); the phenomenon is of great interest and should provoke further study of both the physiological and the psychological aspects.

**Summary**

A group of 24 refractory alcoholics were treated by LSD-25 or mescaline in conjunction with psychotherapy. The follow-up period ranged from 2 months to 3 years (average 1 year).

The results of treatment are described. These were best in the group of character disorders but some psychopaths also showed a favorable response. Borderline or actual psychotics did not appear to benefit.

This study was part of a preliminary trial. It is suggested that the results justify more extensive trials.

**References**


