

A COMPARISON OF SHORT-TERM TREATMENT EFFECTS OF INTRAVENOUS SODIUM AMYTAL-METHEDRINE AND LSD IN THE ALCOHOLIC*

F. G. JOHNSON, M.B.¹

Chemical abreactive aids to psychotherapy have been widely used ever since the early work of Sargant and Shorvon (11) in the Second World War. Commonly used agents have been sodium amylobarbitone (sodium amytal) with methedrine or methyl phenidate,[†] carbon dioxide, and more recently lysergic acid diethylamide. Such agents were originally used in order to facilitate recall of former events with or without a cathartic release of feelings. This was first clearly demonstrated in the case of war neuroses. In practice however such specific recall is not always possible. These agents now seem to be used more widely for their ability to stimulate affective release and to facilitate ventilation of thought associations. Only two controlled comparison studies of abreactive agents appear to have been made — Robinson's study with psychoneurotics (10), and Hollister's with alcoholics (2). The study reported here was primarily designed to assess the effect of L.S.D. in a single-method dose as a facilitating agent in the therapy of the alcoholic — a treatment which the Saskatchewan group acclaimed as having great value (3). Sodium amytal-methedrine (S.A.M.) was, however, used as a 'positive placebo' and so an opportunity was provided to compare the two agents and to contrast short-term effects with long-term follow-up results. Details of methodology and findings have been reported elsewhere (4) but will be summarized here.

Methodology

The study patients were drawn from the people applying for treatment for alcoholism in the outpatient setting of the

London (Ontario) branch of The Alcoholism and Drug Addiction Research Foundation. A multidisciplinary team approach was used, with psychiatrists, social workers, general medical and psychological staff as participants. From March 1965 to June 1966 consecutive new patients applying to the clinic received extensive documentation, psychological testing, physical and psychiatric examination and were assigned in rotation to therapists. During psychiatric examination the patients, unless contraindicated on physical or psychiatric grounds, were asked if they would agree to a 24-hour general hospital psychiatric inpatient stay within the next few weeks. They understood that in hospital one of a number of drugs would be given which would help them to understand themselves and their drinking behaviour better and which would aid their therapy. Those assenting were then randomly assigned to one of four groups:

- 1) L.S.D. given without the therapist being present but with a nurse in attendance and psychiatric supervision throughout (23 patients).
- 2) L.S.D. given with a therapist interacting with them for the first four hours (25 patients).
- 3) A sodium amytal-methedrine combination with the therapist present (22 patients).
- 4) Routine clinic care only (25 patients).

Drugs were given intravenously with individualized dosage to gain optimal drug action. Average drug dosage was L.S.D. 564.3mcgm. $\pm$ S.D. 89.5, sodium amytal 6.42 gr. $\pm$ S. D. 1.81, methedrine 39.05 mgm. $\pm$ S.D. 10.98. The therapist but not the patient was aware of the drug used. Distinctive drug effects made a double-blind scheme impossible. The day following the experience patients were interviewed and they completed questionnaires. Outpatient

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¹Consultant Psychiatrist, Alcoholism Research Foundation, 477 Waterloo Street, London, Ontario.

Assistant Professor of Psychiatry, University of Western Ontario, London, Ontario.

[†]Ritalin.

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care was then continued as required. Independent observers undertook follow-up at one year from initial intake.

The measuring instruments used were as follows:

- 1) A modification of the Linton-Langs (6) Questionnaire (L.L.Q.), developed for use with L.S.D. subjects. This questionnaire was administered on the morning following the L.S.D. experience. It was modified on the basis of using only those items found by Linton and Langs to be significant at the 5 per cent level or better in distinguishing L.S.D. from placebo. In addition sections dealing with somatic sensations were omitted. This reduced the total items from 77 to 47, and these selected items were then condensed into 15 *a priori* questionnaire subgroups in the same manner as by Linton and Langs.

- 2) Other questionnaire items were completed during and after the treatment sessions by the patient's therapist and the supervising psychiatrist. These questions covered areas concerned with affective, somatic and cognitive changes within the experience. Interjudge reliability between three psychiatric social workers and the psychiatrist on these questions was 0.76.

In practice, in the event of discrepancy between the therapist's and psychiatrist's assessment during an actual drug session, resolution was obtained by mutual discussion.

- 3) Further questions concerning post-drug experience were directed to ascertain the patient's subjective estimates of his experience. These were quantified by adding a short descriptive note to each rating scale level.

Results

Total Drug Experience

On the modified L.L.Q., L.S.D. and S.A.M., patients were clearly separable ($p = <.001$). L.S.D. patients showed marked disturbance of time sense, difficulties in thinking and change in the meaning of self and environment but in both groups there was more expansiveness and discussion of topics not usually talked about.

Somatic Effects

Again L.S.D. was significantly different ($p = <.05$) from S.A.M. in its tendency to cause nausea, vomiting, shivering sensations and perceptual distortions. Between the administration of L.S.D. with and without a therapist present significantly more nausea and vomiting were noted in the former case ($p = <.05$). This latter effect might possibly be due to the external stimulus represented by the therapist which might trigger vomiting if the subject were aroused from his phantasy state.

Psychic Effects

The type of reaction experienced with L.S.D. and sodium amytal was quantified by rating the subjects on a five-point scale in respect of the degree of drug reaction experienced. A definite attempt was made by manipulation of drug dosage to induce what might be considered an optimum level of drug action for the individual patient. With L.S.D. subjects marked imagery formation was apparent. However, if a therapist was present, significantly less imagery was obtained. As with the nausea effect, this may possibly be an effect of the therapist interaction on arousal of the patient. In approximately 25 per cent of all L.S.D. and S.A.M. patients a marked to moderate relieving of past experience was noted without significant differences between drug groups.

With regard to transcendental experience, no S.A.M. subjects experienced this quality of response and only two subjects in Group I and one in Group II had marked experiences of this type. This fact has been commented upon in a previous paper and is taken to be a reflection of the unsophisticated nature of the alcoholic population involved and their lack of knowledge that L.S.D. was in fact being given. As a result they had no 'set' towards the experience and knew nothing of the experiences quoted in the literature with regard to spiritual transcendental-type reactions. It was found, however, that patients frequently experienced intense feelings of closeness and understanding in relation to others, and perhaps this was a near but more prosaic equivalent of

the spiritual transcendental reaction. It should be emphasized that in spite of the absence of a transcendental reaction the impact of the experience on many patients was profound and of a psychedelic, insight-producing quality.

Affective Experiences

On the morning after the drug session, patients were questioned closely about the type of emotions they had experienced, and the frequency of affect (fear, love, anger, elation, depression, loneliness) was rated on a 1 to 5 descriptive scale. Between drugs the only significant differences obtained were in respect of fear and panic reactions which were much commoner with L.S.D.

Post-Drug Changes in Affect and Other Measures

On the morning following the drug experience patients were asked questions relating to their assessment of the helpfulness of the therapist and of the experience. Enquiries as to subjective changes in feeling-state were also made. Therapists also made assessments of changes in levels of interest and motivation and were asked to assess how useful they thought the experience would be for the patient. These items were quantified on five-point scales.

Analysis showed affective changes to be similar for all drug groups. One-half to three-quarters of the patients rated themselves less depressed, tense and isolated and to have a more optimistic outlook about the future. They had a rise in self-esteem and a feeling that they would be able to work things out better as a result of the experience. In ratings made by the therapists this optimistic attitude was shared. At significant levels with L.S.D. patients and just short of significance with S.A.M. patients, it was felt that the more intense the imagery and memory evocation the greater the feeling of improvement. However, outcome variables (e.g., one-year abstinence) were found to have no significance correlation with affective changes following the experience.

Helpfulness of the Experience

Forty-eight, 55 and 61 per cent of Groups I, II and III patients respectively felt the hospital drug experience to be of moderate to marked help to them. The remainder felt it was of little or no use.

Help Given by the Therapist

The patient nearly always felt that the therapist had been of real assistance, mainly as a supportive agent, but also as an aid to focus material. They helped patients to return to significant aspects of the experiences which the patient had found useful. In the kaleidoscopic succession of imagery and feeling state in L.S.D. and the rapidity of associations in S.A.M., the therapist seems to act as an anchoring point from which the patient can explore.

Discussion

One-year follow-up results in 87 per cent of the total 95 subjects in Groups I to IV showed on analysis that a statistically significant improvement occurred across every group on drinking and employment indices. However, there were no significant differences between Groups — i.e., over-all improvement was obtained but the use of drug therapy in hospital did not confer special advantages over routine clinic therapy.

These negative long-term findings contrast with the initially positive short-term subjective affective relief which was usually interpreted by the therapist as a helpful prognostic sign. This affective relief occurred with both drugs, and whether or not the therapist was present. From informal discussion with patients it appeared to be a phenomenon which lasted several months but then gradually dispersed. This anxiety reduction phenomenon has been reported also by McGlothlin *et al.* (8) and was interpreted by them as a result of decreased patient defensiveness. Other studies (1) also report subjective improvement post-L.S.D., even when the drug has not been given for any therapeutic effect. Such relief may be interpreted here as occurring because of hospitalization with its supportive magic as

a psychological regressive state or due to some effect of the drugs acting on a psychophysiological level. It is a temptation here to draw the analogy with the sudden relief of tension afforded the alcoholic after a 'bender'. It is difficult to distinguish between these possibilities in this study, but the fact that the same phenomenon occurs in non-hospital non-therapeutic circumstances would suggest a direct effect of the drug on psychophysiological functioning.

The findings in this study of short-term subjective benefit unaccompanied by longer-term benefit may help to explain the seemingly contradictory findings in the literature on the effects of L.S.D. in therapy. Where the study has been short-term the patient apparently benefits; where there is a longer follow-up this beneficial effect is frequently absent (4, 7, 10).

Many studies of treatment of alcoholism indicate the importance of factors extraneous to treatment in influencing outcome; for example, social stability, length of treatment contact, length of drinking history, social class and occupation, (measures of social competence) (5). Such prognostic factors have been found in this study also. In addition five distinct personality types among the alcoholic sample have been delineated (9), each type being closely associated with a different profile of demographic and drinking behaviour variables. This finding indicates considerable heterogeneity of the alcoholic population and the existence of further factors cutting across the treatment groups. It may be reasonable, therefore, to accept with caution the finding of absence of any significantly greater benefit to the alcoholic with the use of L.S.D. It is possible that such benefit may actually be occurring within some specific sub-group, based on personality factors or social competence, but that this benefit is lost in the analysis of the total treatment sample. Further studies are being directed toward investigation of this possibility.

Summary

Lysergic acid diethylamide (L.S.D.), given with and without a therapist present,

is compared with sodium amylobarbitone-methedrine (S.A.M.), given with a therapist present, as abreactive agents in the treatment of alcoholism. Somatic, cognitive and affective experiences under the different treatment conditions are compared. L.S.D. produced a different quality of response from S.A.M. in many respects, but approximately half the patients in all categories noted a pronounced reduction of tension and depression following the experience. This short-term effect is contrasted with long-term (one year) absence of a significantly greater improvement rate with these drugs than with routine clinic treatment. The significance of these findings is discussed.

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Résumé

Le diéthylamide de l'acide lysergique (L.S.D.) administré en présence ou en l'absence d'un thérapeute est comparé avec l'Amylobarbitone-Méthédrine sodique (S.A.M.) administrée en présence d'un thérapeute, comme agents abréactifs dans le traitement de l'alcoolisme. L'auteur compare les résultats somatiques, cognitifs et

affectifs dans les circonstances diverses du traitement. Le L.S.D. a produit une réaction de qualité différente de celle du S.A.M., sous divers rapports, mais la moitié environ des sujets de toutes les catégories ont présenté une réduction marquée des tensions et de la dépression après cette expérience. Cet effet à court terme est mis en contraste avec l'absence à long terme (une année) d'un taux d'amélioration beaucoup plus élevé au moyen de ces drogues que lorsqu'on administre le traitement courant en clinique. L'auteur discute la signification de ces constatations.

The sway of alcohol over mankind is unquestionably due to its power to stimulate the mystical faculties of human nature.

The Varieties of Religious Experience, "Mysticism"

William James

1842-1910