

Complete text

VI LSD No. 288 (§102a)
cortisone (§413e)

M 377 psychotic effect
M 360 schizophrenia

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The effects of cortisone on LSD-25 intoxication in schizophrenic
patients.

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INTRODUCTION

It is well known that in some patients cortisone administration can cause prolonged episodes of psychotic behavior. An extensive review of the literature on cortisone mental disturbances has been carried out by Quarton *et al.* (2). A satisfactory explanation of these disturbances has not yet been achieved. The mental effects of cortisone are about as unpredictable in schizophrenics as they are in mentally normal patients (1).

Lysergic acid diethylamide (LSD-25) has been used extensively as a research tool because it is capable of producing abnormal states of mind which simulate many of the phenomena of the major psychoses. It has been reported by Savage (3) that schizophrenic patients are less reactive to LSD than normal subjects. It would be important to know whether such difference in reactivity is a matter of pharmacological sensitivity to LSD or an apparent difference based upon the extent to which the psychological effects of the drug are communicated to the observer.

Cortisone is a potentially psychotogenic substance while LSD in adequate dosage is consistently psychotomimetic. Accordingly, it was felt to be of theoretical interest to determine what effects, if any, intensive premedication with cortisone might have upon the sensitivity of schizophrenic patients to varying doses of LSD. In order to do this, it was necessary to establish a baseline in terms of the response of each subject to LSD. At the same time, an impression would be acquired of the sensitivity of these schizophrenic patients to LSD.

EXPERIMENTAL DESIGN

A. Subjects: Five young schizophrenic patients with normal physical conditions were employed in this study. All were passively cooperative, well adjusted to hospital routine, moderately well-compensated in terms of their psychoses, and had been relatively stabilized in mental state for several months prior to the study. Although all would respond appropriately to routine questions, they did vary from one to another in their capacity or willingness to talk about personal concerns or to describe in detail their mental or emotional state. Subject 5 was particularly reticent in this regard.

B. Method: During a 40-day control period, the subjects were given oral doses of LSD at intervals of 3-4 days. The starting dose was 10 μ g. The dosage was increased by 5-10 μ g. at each successive trial. The subjects were interviewed by two psychiatrists at a constant time after the ingestion of LSD. Further observations on their behavior were contributed by nurses and aides on the research ward. The subjects were not aware of the nature of the drug being given.

The dosage was increased until the visual disturbances characteristic of LSD intoxication were induced. These perceptual phenomena were chosen because the point at which they appeared was more definite than the other effects of LSD. The visual disturbances consisted of colorful sparks of light, varied coruscations, elementary visual patterns in the form of geometric designs, and a variety of illusory phenomena by which objects in the environment appeared wavy, distorted, etc. The presence of these phenomena was also frequently reflected in the general behavior of the subjects, who would stare persistently at walls or ceilings unless distracted. The dosage necessary to produce these visual effects in a given subject was arbitrarily designated as his LSD threshold. Raising the dose 10-20 μ g. above the threshold level consistently produced the visual disturbances in more marked form.

The subjects were then started on cortisone in a dose of 50 mg. q.i.d. After 6 days of cortisone administration, the threshold dose

was repeated and the effects observed. Further trials were then carried out in each subject with doses varying from 10-30 μ g. above and below the threshold dose level.

OBSERVATIONS

A. A reasonably definite threshold dose of LSD could be determined in 4 of the 5 subjects. This was 70 μ g. in 2 subjects, and 60 and 80 μ g. in the others. The fifth subject, however, over the course of 15 trials in doses from 10-130 μ g. never admitted any effects from LSD other than feeling "drowsy." No significant changes in his behavior were noted until he was given 120 μ g. On this occasion, he stared intently at the ceiling and repeatedly blinked or brushed his hands over his eyes as if to clear his vision. Hallucinations were suspected by the observers but not admitted by the subject.

Sub-threshold doses of LSD in subjects 1-4 produced a variety of minor effects. They were generally more alert and mildly euphoric but physically underactive. There was some smiling and giggling. They described themselves variously as feeling "drunk", "hung-over", "numb", "dopey", "dizzy", "confused", or on "Cloud 8". Some psychological effect was evident even with the smallest doses. None of the subjects became uncooperative, hostile, or showed any serious behavioral disturbances. They appeared to have no difficulty distinguishing the LSD intoxication from their other mental difficulties. The major effects of LSD subsided in each instance within 4-6 hours.

B. No significant changes in sensitivity to LSD were observed in any of the subjects when they were studied while on maintenance doses of cortisone. The threshold doses of LSD as well as doses above and below this level produced the same effects as before.

C. Fifteen days of cortisone treatment did not produce significant changes in the mental state of the subjects studied.

D. Despite the impaired capacity for communication inherent in their schizophrenic illness, the account of the subjective effects of LSD given by these patients did not differ

appreciably from that of many normal subjects of limited basic verbal skill and intellectual attainments. The descriptions of LSD intoxication offered by such subjects are admittedly meager when compared with those which have been given by some of the bright, introspectively curious, and verbally resourceful "normal" volunteers whose accounts occupy a conspicuous place in the literature on hallucinogenic drugs. It was noted in this study that the elaborateness of the description given of the LSD intoxication was related directly to the usual communicative ability of the subject. Because one is so dependent upon introspective reports for evaluating LSD effects, reluctance or inability to communicate subjective experience may be construed as lack of effects. The impression from this study is that schizophrenic patients do not differ from normals in their pharmacological sensitivity to LSD.

SUMMARY

In the schizophrenic patients studied, pre-medication with cortisone had no observable effect upon their sensitivity to LSD intoxication. It is felt that schizophrenics do not differ from normal subjects in their pharmacological sensitivity to LSD, but may differ in their capacity to communicate the subjective aspects of the LSD experience.

BIBLIOGRAPHY

1. Lewis, A., and Fleminger, J. J.: The psychiatric risk from corticotrophin and cortisone. *Lancet* 1: 383, 1954.
2. Quarton, G. C., Clark, L. D., Cobb, S., and Bauer, W.: Mental disturbances associated with ACTH and cortisone: A review of explanatory hypothesis. *Medicine*, 34: 13, 1955.
3. Savage, C.: Variations in ego feeling induced by D-lysergic acid diethylamide (LSD-25). *Psychanal. Rev.*, 42: 1, 1955.

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