

the urine for up to seven days after withdrawal, and Connell¹⁰ recommends the use of a modified methyl orange test whenever the question of amphetamine use arises. Dependency of the amphetamine type may, in the absence of psychotic symptoms, present as a chronic anxiety reaction.

Amphetamine abuse is associated with marked tolerance and variable but very frequent psychological dependency. Though Eddy *et al.*¹¹ contend that amphetamine abuse is not associated with physical dependence or a characteristic abstinence syndrome, other authors^{10, 27} believe that the depth and length of the withdrawal sleep and the marked hunger for food on awakening point to an abstinence syndrome. Oswald and

Thacore³⁷ have demonstrated what they regard as physiological dependence in their studies of the electroencephalographic sleep patterns during the withdrawal phase: "In each case upon withdrawal a huge increase in the R.E.M.-time occurred, reversible by reinstating the drug." It may take up to eight weeks for the electroencephalographic sleep pattern to return to normal.

Central nervous system stimulants in less common use include ephedrine and methylphenidate; their effects and dangers are similar to the amphetamines but less pronounced.

REFERENCES

The references for both Parts I and II will be published with Part II in the issue of March 2.

Hallucinogenic Drug Abuse: Manifestations and Management

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THE recent plea by Smart and Bateman¹ for added information about the growing illicit use of hallucinogens points up the paucity of literature pertinent to the present nature of the problem and the management of acute situations. To help meet this need, we believe it is worth reporting the experiences and impressions which we have gained over the past seven years through our contact with persons using hallucinogenic drugs in a medical setting involving clinical experimentation and treatment, and, more recently, in the emergency department and in the community outside the hospital. As a guide to health resource personnel who are likely to encounter these situations in growing numbers if they have not already done so, we would first like to discuss the clinical presentations and management of these problems. Further information, growing out of our investigations, and related to such questions as motivation of drug users, frequency and pattern of such drug intake and apparent incidence

and nature of unfavourable reactions, is in preparation.

PRESENTING CLINICAL FEATURES AND MANAGEMENT

1. Commonly Available Hallucinogenic Drugs *Lysergic Acid Diethylamide (LSD)*

When first seen, the patient is commonly in a state of acute distress with fear and anxiety but with a relatively clear sensorium. Visual and tactile hallucinations, often accompanied by synesthesias, are common. The patient is sensitive to external stimuli, often of a minor nature, and his focus of attention may shift quickly and frequently. Paranoid suspicions and interpretations are prone to occur, and autistic withdrawal may be noted. As the patient has turned to drugs as a partial attempt to resolve his problems, his fear in the acutely psychotic state is frequently of further and continuing loss of control over his already shaken mental capacities to cope and adapt. This fear may be the basis for the development of his paranoid mistrust and ideation. There is a conspicuous tendency for the mental state to vary considerably through periods of apparent lucidity and normalcy to sudden recurrences of the bizarre or fearful state.

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Appropriate management includes reassurance and the reduction of panic with chemotherapy. The therapeutic alliance with the patient will be enhanced if the treatment personnel express their understanding of his fear of loss of control, if they avoid threatening legal and moral judgments and if they inspire confidence in their ability to understand and help the patient through the threatening reaction. Angry value judgments reinforce the patient's mistrust of treatment institutions and support further rebellion against society by means of hallucinogenic drug use. Hospitalization is reassuring and medically desirable when the patient accepts this; in any case, the acute phase tends to last from 8 to 24 hours and some form of observation through this period is indicated. Gastric lavage is of no value and is a threatening procedure which may complicate or prolong the psychosis. Chlorpromazine has proved useful in reducing the anxiety and lessening the psychotic symptoms. Generally, doses of about 100 mg. (orally, if possible) may be repeated every three-quarters of an hour to one hour until the patient is consistently calm. The usual precautions and observations attendant upon the use of phenothiazines are indicated, especially as they apply to cardiovascular and central nervous system response. Care must be taken to differentiate the LSD state from that of the STP user (see below).

Cannabis Compounds (Marijuana, Hashish)

Marijuana and its related substances are relatively mild hallucinogens, but they may give rise to a psychotic state marked by a variety of the clinical features noted above. In any given individual, it is still unclear how much of his response may be related to the pre-existence of a borderline psychotic mental state, how much to the learning of this type of response through exposure to other drugs, and/or how much to the possible release or reactivation of LSD stored in his body. Where possible, these factors should be assessed. Emergency treatment is similar to that recorded for LSD.

Stimulants

The commonly used CNS stimulants include amphetamine-type compounds. The patient may present in an agitated hallucinatory mental state, marked by the suspicious mistrust noted previously. Particularly common is aggressive behaviour. As with the other drugs, dilated pupils are usually seen; a rise in blood pressure and heart rate is more consistently present with this group of drugs.

Management includes admission to hospital where possible, control with adequate doses of phenothiazines or diazepam (Valium), and monitoring of vital signs. Since withdrawal from continued drug use of this kind may precipitate grand mal seizures, anticonvulsant medication should be considered.

2. Less Commonly Available Hallucinogenic Drugs

STP (2,5-Dimethoxy-4-Methyl-Amphetamine) (DOM)

As usually available in street use, this compound tends to induce an illusionary psychosis of four to seven days' duration. Snyder, Faillace and Hollister² have remarked on the clinical similarity of this psychosis to that presented following the ingestion of LSD. Our experience supports these observations; however, as their work was based on the use of pure DOM, and in doses less than is usual in illicit consumption, we must add a cautionary note. It is becoming apparent that, as Snyder *et al.* anticipated, there may be an atropine-like molecule present in street STP. This would seem to contraindicate the use of chlorpromazine in treatment. Indeed, we are aware of three patients in Toronto and a number in other centres in whom this combination precipitated an acute state of cardiovascular shock. We have been advised by colleagues elsewhere of a number of deaths probably attributable to the combination of chlorpromazine and street STP. We have noted three patients with acute STP toxicity, in whom treatment was inadequate, progress to prolonged psychosis; STP psychosis has tended, in our experience, to last for over four days. We have observed three other patients who responded fairly well to heavy doses of diazepam (Valium) given to the point of drowsiness, and intensive, almost continuous psychotherapy. At this time, it appears that diazepam with careful observation and monitoring of vital signs is indicated, but that intensive supportive psychotherapy may be of further help only in the hands of a therapist experienced in this type of situation. Hospitalization is imperative. The duration of the acute psychosis and the tendency for the patient to develop panic feelings in response to minimal stimuli require that the nursing staff be aware of these factors and receive the consistent support of medical personnel. Any member of the staff who is familiar with problems of illusionogenic drug use may be very helpful to the patient in the acute stage.

FUK

This phosgene derivative has only recently appeared in street use. Early information likens the clinical picture to that of the LSD psychosis but of a slightly longer duration. Until further data are available, management should probably and cautiously follow the same pattern as that used in the treatment of the LSD state. The initials used apparently have no chemical basis; rather they are alleged to be an attempt by the illicit manufacturer to avoid the unfavourable public press given to LSD and STP.

Peyote and Mescaline

These hallucinogens have enjoyed upsurges in use from time to time. They may produce an LSD-like state lasting about 6 to 12 hours. Management of the psychosis is essentially the same as with LSD. Nausea, a common accompaniment, may respond when the appropriate phenothiazine is used.

THC (Tetrahydrocannabinol)

Believed to be the active principle in marijuana, THC has recently become available in tablet form on the illicit market. The clinical presentation and general management are similar to what has been described under the heading of marijuana.

A number of synthetic forms of THC have been developed, and there is no reason to believe that illicit manufacturers would not have the technical or productive capacity to develop these synthetic forms.

Combinations

It is not unusual for any of the above to be used in combination. A patient may have been using both LSD and marijuana, a stimulant and LSD either in tablet or injectable form, STP and marijuana, or other combinations of the above drugs. The future appearance of newer hallucinogens and combinations in the very demanding drug market now in existence seems assured.*

DRUG FORMS AND AVAILABILITY

As an aid to history-taking and a guide to the identification of drugs ingested, a brief list of common drug forms and doses available at the present time are given in Table I. These hallucinogenic drugs are now available in most communities.

TABLE I.

LSD	—variously coloured tablets of 250 to 1800 μ g. (usually combined with a stimulant); —variously coloured capsules of 200 to 300 μ g. (usually combined with a stimulant); —impregnated blotting paper of about 200 μ g. (usually pure); —liquid form, usually colourless, about 50 to 100 μ g. per drop; —sugar cubes are no longer a common presenting vehicle.
Marijuana	—similar to crushed parsley in appearance, usually with seeds and stems screened out; smoked in a hand-rolled cigarette or a pipe; can be brewed like tea.
Hashish	—hard, dark-brown lump; ignited and inhaled.
Stimulants	—amphetamine group available as a powder or in ethical forms; —DMT (dimethyltryptamine) and related compounds available as a concentrated liquid; —may be injected intramuscularly or intravenously, sniffed or taken orally.
STP	—orange or bluish capsules of 10 to 15 mg.
FUK	—capsule form; information sparse at present.
Peyote	—brownish-green powder or ball; —smoked or ingested.
THC	—small brown buffed tablet, commercial in appearance; —early reports indicate a clinical effect similar to that of five average marijuana cigarettes.

HISTORY-TAKING

In view of the patient's mental state and with an awareness that an adequate history is absolutely essential to good management of the crisis situation, we recommended focusing first on the nature of the drug experience in order to establish the diagnosis and a meaningful relationship with the patient. Although a general history may be difficult to obtain at the time the patient is first seen, a detailed history of drug use is necessary for the planning of safe and appropriate management. Drug use related to the presenting psychosis may include a period of weeks or months. This must be sought from the patient and also from anyone accompanying him. Drug users in the cultures involved generally have a good working knowledge of the chemicals used, and it is not unusual to find that some attempt at treatment using commercially available phenothiazine preparations has already been made. As the patient is usually in an agitated and mistrustful state, it will be helpful if the examiner is understanding and gentle in the interview. It is not necessary to accept the drug use *per se* in any way, but at this stage threatening judgments can only irritate the patient. He will also be sensitive to any possibility of police involvement, as he is aware of being part of a law-breaking culture and has likely learned to

*The "Peace Pill", recently available on the street, contains mescaline, cocaine and LSD as white powder in a clear capsule.

mistrust and be suspicious of all standard institutions, as their relevance to him and their real concern about him have been interpreted as minimal. As the cultures involved tend to use a jargon peculiar to such groups, it is helpful for the interviewer to be familiar with some terms in common use. These are meant simply as an aid in understanding the history as given by the patient; the use of this jargon by the interviewer will likely appear to the patient as a sign of dishonesty and falseness.

GLOSSARY OF TERMS IN COMMON USE

acid	—LSD
(to) ball	—to have sexual intercourse
(to) blow one's mind	—to break with one's personal reality
(a) bummer	—an unpleasant drug experience
burned	—to have purchased or used an ineffective drug
(to) come down	—to perceive the ending of drug activity
(to) come onto	—to approach
control	—the capacity to deal effectively with an hallucinogenic drug experience
(to) cool	—handling life situations in an adequate manner
cool	—trust
(to) cop	—to purchase or acquire
(to) crash	—to go to bed
dime bag	—\$10 worth of marijuana; actual amount varies
(to) do	—to ingest a drug or complete an act
(to) do the thing	—to engage in a specific act
(to) do up	—to ingest an affect-altering drug
(a) down	—a tranquillizer
(a) down trip	—an unpleasant experience, usually drug-related
(to) drop	—to ingest
flashing	—aperiodic illusory perception of visual light flashes
(to) freak	—to hallucinate (not necessarily unpleasant or undesirable)
(to) freak out	—to feel loss of control over thought processes and have an unfavourable hallucinogenic drug experience
(to) get off	—to perceive the onset of drug activity
(to) go up	—interchangeable with "to get off"
grass	—marijuana
hangup	—physical or emotional problems, usually associated with external society
hash	—hashish
hassle	—acts perceived as social or physical aggression

j or jay	—marijuana cigarette
joint	—alternative term for "j"
ki or kilo	—kilogram of marijuana
(to) lay on	—to give
(the) man	—police
nickel bag	—\$5 worth of marijuana
paranoid	—loosely used term to denote acute generalized anxiety or specific fearfulness
playing mind games	—attempting to occasion emotional disruption by intent or by unnecessary questioning
(to) shoot or shoot up	—to inject (intramuscularly or intravenously)
(to) smoke	—to use marijuana or hashish
speed	—any stimulant
speed freak	—an abuser of stimulants
straight	—not a drug user
(to) put on	—to deceive, with humorous or absurd intent
toque	—puff on a marijuana cigarette
trip	—a pleasant hallucinogenic experience (a <i>bad</i> trip is the subject of this paper)
(to) turn around	—to alter radically one's own or another's perspective
(to) turn on	—to involve one's self or another with a sensory experience, not necessarily by means of drugs
turned on	—involved with
wired	—addicted or habituated

CONCLUDING REMARKS

We have attempted to present a brief but relevant outline of a growing clinical problem. The material is based on our experience with hallucinogenic drugs in research, treatment and community settings. In general, we have found that most acute hallucinogenic drug crises are quite manageable with appropriate and careful history-taking and assessment, chemotherapy and a supportive, empathetic and realistic relationship with the patient. Most crisis situations of this kind resolve without major sequelae or the absolute necessity for continuing psychiatric care. However, careful assessment of the mental state and situation following resolution of the crisis reaction is indicated. At this time, it is appropriate to explore with the patient possible alternatives to drug usage as problem-solving mechanisms. It should be noted that such explorations must take into account the probability that the cultural milieu of the patient may approve and, indeed, encourage drug use; the alternatives available may have to be approached indirectly.

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