Short Communication

PSYCHOACTIVE PROPERTIES OF METHYSERGIDE

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Methysergide is an ergot alkaloid primarily used for the prophylactic treatment of migraine headaches (Medical Economics 1986). It has also been used in the management of carcinoid and postgastrectomy dumping syndromes (Levine 1974; Warner 1967). This substance is a derivative of lysergic acid and shares many of the properties of the other derivatives of this class of drugs (Douglas 1980). The psychoactive properties of some of these derivatives, such as lysergic acid diethylamide (LSD), are well known and striking (Hoffer & Osmond 1967). There is a growing body of literature suggesting that other ergot alkaloids may have similar, but less remarkable, psychoactive effects (Ott & Neely 1980; Bigwood et al. 1979; Persyko 1972). Methysergide has been reported to produce significant psychological changes in some individuals (Persyko 1972).

PHARMACOLOGY

Methysergide (1-methyl-*d*-lysergic acid butanolamide) is a congener of LSD. When the chemical structure of methysergide is compared to that of LSD, close similarities are apparent. The primary pharmacological effect of methysergide is the blocking of the activity of serotonin (5-hydroxytryptamine, 5-HT) at various locations. The effect of methysergide on central neural tissue is unclear, but it is thought to be minimal (Medical Economics 1986; Douglas 1980).

The normal therapeutic dose of this substance is four to six milligrams per day. This drug may have vasoconstriction properties and may also affect uterine tissue; consequently it should not be used during pregnancy (Medical Economics 1986). Prolonged use of methysergide has been associated with a serious medical complication, inflammatory fibrosis (Graham 1967).

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CASE REPORT

A 29-year-old male college student had been prescribed methysergide as prophylactic therapy for vascular headaches. He had no prior experience with hallucinogenic drugs and had no history of psychiatric illness. He related that he took six milligrams of methysergide one evening after having forgotten to take two prior doses of two milligrams each earlier in the day. About 20 minutes after taking the methysergide, he experienced nausea and abdominal cramping. After approximately one hour after taking the drug, he reported feelings of anxiety and depersonalization. He reported a subjective feeling that colors seemed uncomfortably vivid and that his thoughts were emotionally laden and difficult to express. These effects passed after about five hours and he subsequently went to bed and slept well. Follow-up over the next year revealed no further difficulty or recurrence of this experience. The patient discontinued use of methysergide after this incident because he was worried that a similar event might occur.

DISCUSSION

The exact psychopharmacological mechanism for the hallucinogenic activity of ergot alkaloids is unknown. Several compounds of this class of drugs are known for their potent psychoactive effects and it has been suggested that antagonism of the 5-HT receptor may be associated with hallucinogenic potential of these alkaloids (Hoffer & Osmond 1967). Methysergide also has this antagonistic effect (Douglas 1980) and this may account for its potential psychoactive properties.

A possible interpretation of the case described above is that the individual using methysergide was experiencing a psychological change that was not due to the effects of the drug. Although several of his symptoms are consistent with the presentation of panic attacks, the general experience of the subject did not conform with such attacks. The symptoms of this case included the unnaturally vivid perception of colors and a tendency toward emotionally laden thoughts commonly experienced in the hallucinogenic state. The subject had never experienced such a condition before and noted a temporal relationship between methysergide overdose and the onset of his perceptual changes. Furthermore, a similar response to methysergide has been previously reported (Persyko 1972). Therefore, conver-

gent evidence suggests that the experience of the person in the case report was due to the large dose of methysergide.

Methysergide may be a psychoactive ergot alkaloid. Its potential as a hallucinogen is severely limited by its peripheral effects and associated medical complications. Research beyond the level of case reports is indicated to clarify this issue. It is recommended that it be used conservatively, conforming to the instructions of the manufacturer.

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