The effects of Ecstasy

Nurses working in critical care are seeing an increasing number of Ecstasy overdoses. This article describes the effects of Ecstasy and discusses the need for nurses to know more about the drug and the consequences of overdose.

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If a person becomes ill after taking Ecstasy, their friends are often reluctant to seek medical help until the person becomes dehydrated or collapses (Cook 1995). When do they seek help, they may be reluctant to tell hospital staff what their friend has taken, fearing that anything they say may be passed on to the police (Jones and Owens 1996).

By the time the user reaches hospital he or she may be in a serious condition, and staff have to act quickly. Ecstasy users usually know exactly what they have taken but, unfortunately, general ignorance about the drug is shared by health professionals.

**MDMA AND ECSTASY**

The drug 3,4-methylenedioxymethamphetamine (MDMA) was first marketed in 1914 as an appetite suppressant and later repackaged to treat psychiatric symptoms; however, it was unsuccessful in both areas (Wake 1995). Misuse of MDMA began in the 1970s (Wake 1995). In this article, MDMA is used to describe the active drug, and Ecstasy to describe the drug as it is popularly found in the community.

In 1990, four deaths were recorded from Ecstasy use in the US, and none in the UK. By 1991, seven deaths in the UK had been attributed to Ecstasy (Wake 1995). Deaths due to Ecstasy may exceed official figures — Cook (1995) speculated that it may be responsible for 50 deaths in the UK. The figure is rising, despite increased public awareness since the death of Leah Betts in 1995.

Tober’s (1994) survey of 186 university students found that over half had tried the drug, and 10 per cent took it at least every fortnight. Tober estimated that anything they say may be passed on to the police (Jones and Owens 1996).

**DOSAGE**

Ecstasy is produced illegally. Production is complicated and expensive, so the active drug is often adulterated with other substances (Cook 1995). This means that the dose of MDMA in each tablet can vary widely — Wake (1995) quoted a range of 50-150mg per tablet, while Cook (1995) cited 100-200mg per tablet. Ten or more tablets may be taken at once, often with other drugs (Cook 1995). The preferred route is oral, although rectal use, which enables quicker absorption, is also popular (Cook 1995). Even if the user has some experience of using the drug, accidental overdose is easy.

Mortality is often difficult to predict, as it bears little relation to the amount of Ecstasy taken (Jones and Owens 1996). There are reports of one tablet causing death (with serum MDMA levels of 0.424 mg/l), while in another case 42 tablets (serum MDMA 7.72 mg/l) caused few problems beyond hypertension and tachycardia (Wake 1995). The effects of the drug depend on individual metabolism and habituation to its effects.

**PHYSIOLOGY**

The human hypothalamus includes a ‘pleasure centre’, activated by various neurotransmitting drugs, such as dopamine (Marieb 1995). Nurses working in critical care are more familiar with dopamine given intravenously to increase urine output. It is also an endogenous chemical produced in many parts of the central nervous system, and is unable to cross the blood brain barrier. So the dopamine that affects the hypothalamic pleasure centre will not affect, or be affected by, intravenous renal dopamine.

Exogenous drugs that induce euphoria trap this endogenous dopamine in the synapse of the pleasure centre. So the pleasure centre is constantly stimulated, causing the ‘high’ (Marieb 1995). Marieb suggested that exogenous drugs also inhibit production of endogenous dopamine, so that when the dopamine trapped in the synapse is eventually metabolised, the synapse has a deficit of dopamine, and the central nervous system is unable to meet the demand. This causes the ‘low’ that follows the ‘high’ of stimulant drugs.

**EFFECTS**

Ecstasy stimulates feelings of euphoria and benevolence (Wake 1995), breaking down social inhibitions and causing a strong desire to bond with others (Cook 1995).
Coagulopathies While Wake (1995) cited disseminated intravascular coagulation (DIC) as a major cause of death, Cook (1995) suggested that it is rare. They agree that it is usually fatal if it occurs. Jones and Owens (1996) described rapid clotting derangement occurring following Ecstasy ingestion.

Neurological and psychological damage While habitual Ecstasy use damages serotonin and dopaminergic neurones (Day 1996), major neurological and psychological sequelae seem to be limited (Cook 1996), although survivors often have panic attacks ('bad trips') in which they believe death to be imminent (Cook 1995).

‘Body packing’ To avoid detection, dealers and users of illegal drugs often pack them into a bag which they stuff into a body cavity, usually the rectum (Jones and Owens 1996). If the bag breaks, the drug will be absorbed from the rectum, which has a highly vascular blood supply. The drug transporter may present at hospital with an accidental overdose from a broken bag – but may be understandably reluctant to admit that they have a continuing rectal infusion of the drug. Attempts to remove the drug bag from the body cavity may cause further spillage of the drug into the gastro-intestinal tract (Jones and Owens 1996). A similar problem can be caused by drug users ‘body stuffing’ (orally taking all the drug they have on them) to hide any evidence before being arrested (Jones and Owens 1996).

NURSING CARE Immediate care will be resuscitative, directed at supporting the most life-threatening system failures and on minimising absorption of the drug (for example, by gastric washout) (Jones and Owens 1996).

Because Ecstasy is illegal, friends and relatives are likely to feel guilt. Parents are often unaware that their son or daughter is taking illegal drugs. The nurse’s duty of confidentiality may compromise interaction between the nurse and the patient’s family. Parents may ask questions about the drug – these questions may be inappropriate but should nevertheless be answered honestly. Unfortunately, few pre- and post-registration nursing courses include modules about Ecstasy (Day 1996), and nurses may feel ill-prepared for dealing with these patients and their families.

CONCLUSION Awareness of the potentially lethal effects of Ecstasy has been heightened by a few well-publicised cases. The chemical effects of the drug themselves may be compounded by impurities from illegal production and complicated by an understandable reluctance to divulge information. It seems likely that the use of Ecstasy will both continue and increase. Nurses working in critical care and acute areas are likely to look after a growing number of admissions caused by such overdoses, and should know more about the effects of this drug.