Case Report

Dermatology

Dermatology 1998;197:171–173

Received: January 26, 1998
Accepted: February 27, 1998

Ecstasy Pimples – A New Facial Dermatosis

U. Wollina [a]
H.-J. Kammler [a]
N. Hesselbarth [c]
B. Mock [b]
H. Bosseckert [c]

[a] Department of Dermatology,
[b] Institute of Clinical Immunology and
[c] Department of Internal Medicine I,
Friedrich Schiller University of Jena, Germany

Key Words
Acneiform facial dermatosis
Ecstasy
Serotonin

Abstract
Ecstasy (XTC) has become a popular drug in the rave, dance and techno scene. Several severe disorders due to drug addiction have been described but no dermatological symptoms. We report on 2 patients (20-year-old female, 21-year-old male) with medical problems after taking XTC. Both developed a facial rash with reddish pimples after oral intake of XTC. The distribution resembled either periorificial dermatosis or acneiform rash without white- or blackheads. The lesions cleared without specific treatment. We suggest that XTC pimples represent an acneiform dermatosis in young people taking designer drugs. Though the dermatosis itself seems to be mild, it may be a cutaneous marker for drug abuse.

Introduction

Ecstasy (XTC) is a term for N-methyl-3,4-methylenedioxyamphetamine (MDMA), which is spread most of all in the dance, rave and techno scene [1, 2]. XTC has unique psychoactive properties, acting as a stimulant and inducing feelings of empathy. Toxicologic studies suggest that because of the variable composition of XTC tablets, unpredictable types and amounts may be taken by XTC users. Several toxic compounds other than psychoactive drugs could be detected in a recent survey on XTC [3]. Severe side effects have been reported in about 35% of London XTC drug users [4].

Although known among drug users, the cutaneous side effects of XTC have not got attendance in the medical literature, though the knowledge may help to identify people at risk for other severer or even life-threatening effects of drug misuse.

Case Report

A 20-year-old woman has been referred to the Department of Internal Medicine by the general practitioner because she developed diarrhea and a pruritic yellowish skin. She had taken one half of an XTC tablet (about 70 mg MDMA) 7 days before. She was a medium heavy smoker.

On examination we found an asthenic young woman with icteric skin and sclera. There was no evidence of cardiopulmonary failure, edemas, lymph node swelling or bleeding. She felt pain during liver palpation. The liver was somewhat enlarged with an increased consistency, but the ultrasound examination showed no abnormalities. Serological investigations for hepatitis A, B and C were negative, but parameters of cholestasis were found to be increased: γ-GT 0.41 µmol/ sl (normal <0.30), alkaline phosphatase 4.76 µmol/sl (<2.83), whereas the transaminases were in the normal range. ALAT was 23 µmol/sl (normal <0.28), ASAT 15 µmol/sl (<0.25). As a sign of severe hepatocyte damage, we found a distinct elevation of GLDH (9.25 nmol/sl; normal <67). In addition, conjugated bilirubin (300 µmol/sl; normal <17) and unconjugated bilirubin (200 µmol/sl; normal <7) were increased. MDMA could be identified in urine by gas chromatography mass spectroscopy but was not further quantified.

The diagnosis of acute hepatotoxicity after ingestion of XTC was made. During hospitalization she rapidly developed reddish papules over the face with a distribution similar to perioral dermatitis and hyperhidrosis (fig. 1a). The lesions suggested a sweat gland involvement and the diagnosis 'XTC-induced facial dermatosis' was made.

The patient was given cholestyramine and a fat-reduced diet. The hepatic failure showed a remission during the next 3 weeks, and the papules cleared with a mild treatment using an ointment (1% metronidazole in Abitima®).

Another male patient aged 21 years has been seen with similar lesions on the cheeks after XTC. He suffered from post-XTC mood but had no signs of hepatotoxicity. The dermatological treatment was the same as in the female patient (fig. 1b).

Remarkably, both patients did not have acne before the rash.

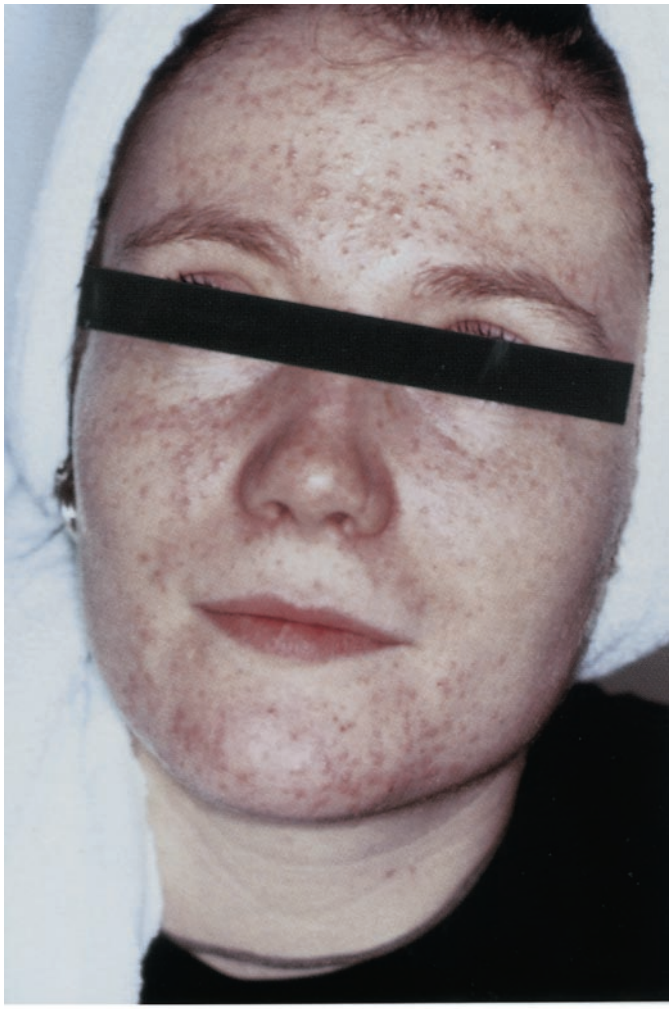
Discussion

We report on 2 young XTC users who developed a papular and pustular rash compatible with XTC-induced acneiform eruption. The major compound of XTC is MDMA, which induces a large release of serotonin (5-HT) in the synaptic cleft, inhibits the reuptake inactivation of 5-HT and inhibits the key enzyme involved in biosyn-

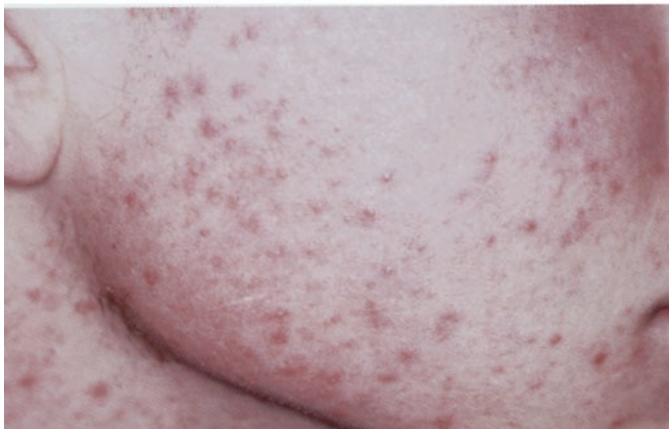
Fax + 41 61 306 12 34
E-Mail karger@karger.ch
www.karger.com

This article is also accessible online at:
http://BioMedNet.com/karger

Prof. Uwe Wollina, MD
Department of Dermatology, University of Jena
Erfurter Strasse 35
D–07740 Jena (Germany)
E-Mail uwol@derma.uni-jena.de



a



b

Fig. 1. Facial rash with reddish papules. **a** Patient No. 1. **b** Patient No. 2.

Table 1. Severe medical problems in XTC users reported in the literature

Side effect	Comment
Brain	
Panic disease, psychosis including paranoia	milder forms are common
Mid-week mood	very common
Depressions	common
Depersonalization and behavioral abnormalities and disorders	
Abnormal stress responses even in short-term users	
Seizures	
Intracranial hemorrhages and other cerebrovascular accidents	
Hyperthermia	
Heart	
QT interval prolongation	
Arrhythmia	
Gastrointestine	
Various degrees of hepatotoxicity	quite common
Acute liver failure	
Hypoglycemia	
Lungs	
Retropharyngeal emphysema	
Spontaneous pneumomediastinum	
Kidney	
Prolonged elevation of serum creatine kinase and renal failure	
Muscles	
Rhabdomyolysis	

thesis of 5-HT. There is growing evidence that MDMA and other phenylethylamines are neurotoxic and can cause a long-term damage to 5-HT nerve terminals in animal brains [3]. There is a growing list of severe adverse effects in XTC users leading to major medical problems or death (table 1).

The dermatological impact has not been discussed in the scientific literature. We observed a rash of small reddish papules and pustules but no black- or whiteheads in our 2 patients. MDMA, the major component of XTC, can be detected in hair and sweat by gas chromatography mass spectroscopy [5, 6].

The facial rash has not been investigated by histology. So we can only speculate on its pathogenesis. Hepatotoxicity of MDMA and related compounds interfering with sexual steroid metabolism might have provoked a sebaceous gland response. Because of the distribution pattern, this seems to be likely in patient 2.

There is direct neuroanatomic evidence that serotonin neurons make synaptic input to peptidergic neurons like vasoactive intestinal peptide neurons [7]. The latter is a major peptide in the nerve endings of eccrine glands [8]. The neuropeptide-mediated stimulation of eccrine glands may account for the rapid evolution of 'XTC pimples' in drug addicts. Hyperhidrosis has been recognized as a cutaneous side effect of amphetamines and related drugs for years and may be due to interference of these drugs with skin temperature regulation [9–11]. In addition, the development of facial flushes has been reported in connection with the 5-HT syndrome [11], and miliaria, itching and burning sensations of facial skin have been described among farmers exposed to deltamethrin in the cotton fields [12]. Taken together, disturbances of 5-HT regulation, temperature response and facial flush are seen in patients taking XTC. We would like to describe this unique XTC-related dermatosis as 'XTC-induced facial dermatosis' and suggest a close relationship to acneiform dermatoses like perioral dermatitis and rosacea.

References

1 Kuhlmann T: Ecstasy, a new designer drug in the techno scene. Psychiatr Prax 1996;23: 266–269.
2 Schwarzt RH, Miller NS: MDMA (ecstasy) and the rave: A review. Pediatrics 1997;100: 705–708.
3 Giroud C, Augsburger M, Sadeghipour F, Varesio E, Veuthey JL, Rivier L: Ecstasy – The status in French-speaking Switzerland. Composition of seized drugs, analysis of biological specimen and short review of its pharmacological action and toxicity. Schweiz Rundsch Med Prax 1997;86:510–523.
4 Williamson S, Gossop M, Powis B, Griffiths P, Fountain J, Strang J: Adverse effects of stimulant drugs in a community sample of drug users. Drug Alcohol Depend 1997;44:87–94.
5 Fay J, Fogerson R, Schoendorfer D, Niedbala RS, Spiehler V: Detection of methamphetamine in sweat by EIA and GC-MS. J Anal Toxicol 1996;20:398–403.
6 Rothe M, Pragst F, Spiegel K, Harrach T, Fischer K, Kunkel J: Hair concentrations and self-reported abuse history of 20 amphetamine and ecstasy users. Forens Sci Int 1997;89: 111–128.
7 Fuller RW: Mechanisms and functions of serotonin neuronal systems: Implications for neuropeptide interactions. Ann NY Acad Sci 1995;780:176–184.
8 Sato K, Sato F: Cyclic GMP accumulation of cholinergic stimulation of eccrine sweat glands. Am J Physiol 1984;247(Cell Physiol 16):C234–C239.
9 Yehuda S, Ben-Uriah Y, Mostofsky DI: Effects of *d*-amphetamine on colonic and skin temperatures of rats kept at various ambient temperatures. Int J Neurosci 1981;14:219–222.
10 Veltri JC, Temple AR: Fenfluramine poisoning. J Pediatr 1975;87:119–121.
11 Litt JZ, Pawlak WA Jr: Drug Eruption Reference Manual – 1997 DERM. New York, Parthenon Publishing Group, 1997, pp 23–24.
12 Wang SJ, Zheng QL, Yo L, Xu BH, Li YR: Health survey among farmers exposed to deltamethrin in the cotton fields. Exotoxicol Environ Saf 1988;15:1–6.