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CASE REPORT

Tired warrior: The brotherhood of drugs

Yorgun savaşçı: Uyuşturucu maddelerin kardeşliği

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Abstract

Emergency department visits due to illicit drug use and related effects are increasing. Among illicit drugs, cannabis and amphetamine derivatives are quite popular. In patients suspected of drug use, certain illicit drugs can be detected in urine samples. Recently, the combined use of illicit drugs has been observed more frequently, leading to increasingly complex clinical presentations. Cases can be fatal due to cardiac effects, respiratory depression, and cerebrovascular events. Patients must be monitored and undergo serial physical examinations. In case of unusual developments during follow-up, poly-drug use should always be considered. A 33-year-old male patient was brought to the emergency department complaining of aggression. He had a history of alcohol dependence. Samples taken tested positive for cannabis and methamphetamine. During follow-up, his general condition unexpectedly deteriorated, and blood samples taken showed elevated CK and Kre values. The patient was transferred to the intensive care unit with diagnoses of substance intoxication, rhabdomyolysis, and acute kidney injury. We wanted to draw attention to both the increasing drug use among young men in recent times and the complex clinical situation resulting from combined use, and to present a rare case of rhabdomyolysis associated with methamphetamine use with our case.

Keywords: Amphetamine, cannabis, rhabdomyolysis.

Özet

Uyuşturucu madde kullanımı ve buna bağlı gelişen etkiler nedeniyle acil servis başvuruları giderek artmaktadır. Uyuşturucu maddeler arasında esrar ve amfetamin türevleri oldukça popülerdir. Klinik olarak şüphe duyulan hastalarda idrar numunesinde bazı uyuşturucu maddelerin tespiti mümkündür. Son zamanlarda uyuşturucu maddelerin birlikte kullanımı daha sık gözlenmektedir ve buna bağlı olarak gelişen klinik durum oldukça karmaşık hale gelmektedir. Kardiyak etkiler, solunum depresyonu ve serebrovasküler olaylar neticesinde vakalar mortal seyredebilmektedir. Hastalar mutlaka monitörize takip edilmeli ve seri fizik muayene yapılmalıdır. Takip esnasında gelişen olağandışı durumlarda mutlaka çoklu madde alımı akla getirilmelidir. Otuz üç yaşındaki erkek hasta saldırganlık şikayeti ile acil servise getirildi. Özgeçmişinde alkol bağımlılık öyküsü mevcuttu. Alınan numunelerde cannabis ve metamfetamin pozitif saptandı. Takipleri esnasında beklenmedik şekilde genel durumu bozuldu ve alınan kan numunelerinde CK ve Kre değerleri yüksek saptandı. Hasta madde intoksikasyonu, rabdomiyoliz ve akut böbrek hasarı tanıları ile yoğun bakım ünitesine devredildi. Son zamanlarda genç erkekler arasında giderek artan uyuşturucu kullanımına ve birlikte kulanım sonucu oluşan karmaşık klinik duruma dikkat çekmek ve metamfetamin kullanımına bağlı olarak nadir görülen rabdomiyoliz olgusunu bu vakamız ile sunmak istedik.

Anahtar Kelimeler: Amfetamin, cannabis, rabdomiyoliz.

INTRODUCTION

According to 2024 data from the World Health Organization, approximately 600,000 people worldwide died from conditions related to drug use. The most commonly reported drugs are cannabis and amphetamine derivatives. Drug use is more prevalent among men aged 15-64 (1). Marijuana is a psychoactive compound derived from the cannabis plant. It is known by many names, including marijuana, cannabis, ganja, weed, and pot. Its reported effects include agitation, disorientation, panic, respiratory depression, tachycardia, hypotension, ataxia, myocardial infarction, and impaired motor function. It can be used orally and by inhalation. It can be analyzed in urine, hair, and saliva (2,3). Amphetamine is a synthetic compound that has powerful effects on dopamine, norepinephrine, and serotonin in the central nervous system. Depending on its use, symptoms such as euphoria, increased alertness, hyperthermia, tachycardia, hypertension, aortic dissection, heart failure, myocardial ischemia, weight loss, liver and kidney damage, paranoia, rhabdomyolysis, psychosis, intracranial hemorrhage, and seizures have been reported. It can be used orally, intranasally, via inhaler, or injectably. It has derivatives such as MDMA (Ecstasy), methamphetamine, and methylphenidate. It can be

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detected in urine and saliva (4,5). Rhabdomyolysis is a serious clinical syndrome that causes kidney damage, intravascular coagulopathy, and electrolyte imbalance due to severe skeletal muscle damage. Muscle pain, abdominal pain, fatigue, weakness in the extremities, and dark-colored urine are the most common symptoms. It is diagnosed by elevated Creatine Kinase (CK) levels (6).

We aimed to emphasize that the clinical picture may be more complex in patients with multiple substance use and to present a case of rhabdomyolysis, a rare consequence of methamphetamine use.

CASE REPORT

A 33-year-old male patient was brought to the emergency department by law enforcement officers for causing damage to property. It was learned that the patient had previously received psychiatric treatment and had been hospitalized for alcohol dependence, with his treatment continuing on an outpatient basis. On initial examination, the patient had a Glasgow Coma Scale (GCS) score of 15, was conscious, and showed no agitation or aggression. The patient's vital signs at the time of admission were blood pressure 129/84 mmHg, pulse 104/min, temperature 37°C, and SpO2 94%. An electrocardiogram (ECG) revealed sinus tachycardia. The patient was monitored while blood and urine samples were collected. The following tests were performed: WBC: 34.36, Plt: 315, Hb: 17.3, Kre: 1.42, GFR: 64, CRP: 140.7, INR: 1.23, ALT: 140, AST: 568, ethanol: 0, CK: 72,500. At the time of admission, blood gas analysis showed pH: 7.32, Lactate: 2, HCO3: 14.4, PCO2: 19.2. Urinalysis showed leukocytes: 1, erythrocytes: 28, Amphetamine >5000 (<500), and Cannabis: 54 (<50). No additional pathological findings were observed apart from subpleural ground-glass opacities interpreted as indicative of atypical pneumonia in imaging studies. Approximately two hours into the follow-up period, slowing of limb movements developed, consciousness began to deteriorate, and agitation emerged. Blood gas taken simultaneously showed pH: 7.24, HCO3: 9.8, Lactate: 1.2, PCO2: 21. Urine output was <200 cc. The patient was consulted to relevant departments regarding diagnoses of substance intoxication, pneumonia, rhabdomyolysis, and acute kidney injury. Following consultations, the patient scheduled for intensive care admission underwent hemodialysis (HD) within approximately 6 hours of admission. The patient, who did not require repeat HD during follow-up, showed a decrease in CK levels and improvement in consciousness at the end of the 4-day intensive care period. In line with this clinical course, outpatient follow-up was recommended, and the patient was discharged for outpatient monitoring.

Table 1. Laboratory values and reference range

	Reference range	Case values	Unit
WBC	4.5-10	34.36	10^3/ µL
PLT	150-450	315	10^3/ µL
HB	12-16 (Female) 13-17 (Male)	17.3	g/dL
CRE	0.50-0.90	1.42	mg/dL
CK	0-170	72.500	U/L
ALT	0-33	140	U/L
AST	0-32	568	U/L
CRP	0-5	140	mg/L
INR	0.8-1.2	1.23	INR

WBC: White blood cell, PLT: Platelet, HB: Hemoglobine, CRE: Creatinin, CK: Creatin cinase, CRP: C-reactive protein, INR: International normalized ratio, ALT: Alanine aminotransferase, AST: Aspartate aminotransferase.

DISCUSSION

Lifestyle changes and easier production and distribution have caused alcohol and drug addiction to become a growing public health problem. Although rankings vary by country, cannabis and amphetamine derivatives are the most commonly used drugs worldwide. Drug users are also more likely to use alcohol and multiple drugs (7,8). In our case, the patient had a history of two abused drugs and alcohol dependence, consistent with reported data. Cardiac effects and respiratory depression are the most serious causes of mortality from cannabis. For methamphetamine, vascular effects such as aortic dissection, malignant hyperthermia, and intracranial hemorrhage are more common (9,10).

Methamphetamine affects neurotransmitters and disrupts hormonal balance and thermoregulation. This action results in hyperpyrexia. Heat loss from hyperpyrexia, muscle cramps, and increased mobility with euphoria can cause rhabdomyolysis (11). Rhabdomyolysis happens in about 20% of methamphetamine cases. CK values average 1500-6000 U/L. Hemodialysis and death are reported rarely (12).

In a similar case reported by Gürel et al., the patient's CK was 15.000 U/L and Cre was 8.06 mg/dL. After 12 days of treatment involving 5 courses of HD, the patient was discharged (13). In the case reported by Zarlasht et al., CK was 36.900 U/L, Cre was 2.70 mg/dL, and the patient was treated with intravenous (IV) fluids without the need for HD and was discharged (14).

In this case, we present, although a fatal course was not expected from a vascular and cranial perspective, many symptoms mentioned in the literature for methamphetamine and cannabis were observed, such as liver and kidney damage, pneumonia, disorientation, and agitation. Significantly higher CK values than those reported in the literature were detected, while no marked elevation in Cre values was observed. In the treatment of rhabdomyolysis and the acute kidney injury it causes, IV fluid replacement and urine alkalinization should be performed. If there is severe metabolic acidosis, uremic symptoms, or hyperkalemia, HD should be considered (15).

In agitated patients presenting to the emergency department, the possibility of alcohol and drug use should be considered, and stabilization should be achieved first, followed by a thorough history taking. A detailed physical examination should be performed, and the patient should be monitored. After decontamination, symptomatic treatment is required. Urine toxic substance panel screening is necessary to make a diagnosis. Failure to respond to treatment or deterioration of the patient's general condition may indicate multiple drug use (16).

In our case, the slowing of movements, decline in consciousness, and insufficient urine output despite appropriate fluid replacement suggested the possibility of multiple substance use and acute kidney injury. The diagnosis was clarified by a urine toxicology panel and biochemistry results. Patients who present to the emergency department and are thought to be substance abusers should be closely monitored for conditions that may have a mortal course, and early treatment should be initiated for complications that may occur.

CONCLUSION

Substance and/or alcohol use must be investigated in patients presenting with agitation. Given the serious clinical consequences that substance use can cause, determining which substance was taken is of great importance. The complexity of the clinical picture should suggest poly-substance use, and patients should be closely monitored.

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