



Toxicology Section - 2016

K18 A European Rave Drug (Prolintane) Fatality in Phoenix, Arizona

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After attending this presentation, attendees will have a basic knowledge of prolintane and its danger as a synthetic sympathomimetic amine that is being used in the European Rave scene and is emerging in the United States.

This presentation will impact the forensic science community by discussing a specific case example of a drug that has been around since the 1960s in Europe, yet is just starting to show up in isolated cases in the United States.

Prolintane (phenylpyrrolidinopentane) is a synthetic sympathomimetic amine that was originally introduced in the 1960s as a treatment for narcolepsy and attention deficit disorder.¹ Although prolintane continues to be prescribed in Europe, Africa, and Australia, it is not legally available in the United States.¹ It has been compounded with multivitamins and made available in tonic or tablet form where prescribed, though it has been used as a doping agent worldwide; for this, it has been banned by the National Collegiate Athletic Association and the World Anti-Doping Agency.¹ It is not scheduled by the United States Drug Enforcement Agency.

Blood or plasma levels of prolintane following oral administration have not been reported. The adverse effects of this drug may include headache, anxiety, hypertension, tachycardia, anorexia, and insomnia.² The literature reports experiences of dizziness, palpitations, hyperactivity, and a panic reaction along with confusion, agitation, loss of consciousness, and combativeness.¹ Prolintane undergoes extensive biotransformation with the production of at least 18 metabolites.²

In 2007, Kyle and Daley reported two cases in Mississippi of the first medically documented cases of prolintane abuse in the United States (both victims survived the over-dosage).¹ Testing on both cases was completed on urine only with Solid Phase Extraction (SPE), then with Gas Chromatography/Mass Spectrometry (GC/MS) analysis.

In the presented case, a 51-year-old man was observed running through traffic and acting strangely. The subject was tackled by police and eventually handcuffed, but then went unresponsive while in police custody. The officers did not use a Taser™ nor any injuring force. The subject was rushed to the nearest emergency room but sustained rapidly progressive respiratory distress, then acute cardiopulmonary arrest. Resuscitative efforts were not successful. A urine drug screen in the hospital was found to be positive for PCP and Ecstasy. Upon preliminary standard protocol of postmortem examination, no immediate cause of death could be attributed except for hyperthermia of 102.7°, diffuse pallor, and dry mucous membranes.

The decedent's hospital samples were tested for alcohols by Gas Chromatography/Flame Ionization Detector (GC/FID) and for common drugs of abuse by **Enzyme-Linked Immuno-Sorbent Assay** (ELISA), with an unknown peak detected in the basic drug screen of the blood by Gas Chromatography/Nitrogen Phosphorous Detection (GC/NPD) and confirmation by GC/MS. A sample of verified standard prolintane was obtained from the University of Mississippi and the identity of the unknown peak was verified. Prolintane was quantitated by GC/MS and found to be 1.50mg/L in the hospital blood. No other drugs or volatile compounds were detected in the hospital samples, including PCP and MDMA, by instrumental analysis including Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS).

The deputy chief medical examiner performed a comprehensive autopsy on the decedent and came to the conclusion that the cause of death was due to complications of hyperthermia associated with acute prolintane intoxication and physical exertion in an outdoor heat environment.

Reference(s):

1. Kyle P.B., Daley W.P. Domestic abuse of the European rave drug prolintane. *J Analytical Tox* 2007;31(7):415-8.
2. Baselt R.C. *Disposition of toxic drugs and chemicals in man*. Ninth edition. Seal Beach: Biomedical Publications, 2011:1426-7.

Prolintane, Postmortem, Toxicology