FALSE POSITIVE DRUG TEST IN PATIENT WITH ACUTE POISONING

NATASHA SIMONOVSKA, Aleksandra Babulovska, Zanina Pereska, Afrodita Berat-Huseini, Kristin Kostadinovski

University Clinic for Toxicology, Clinical Centre, "Mother Teresa", Medical Faculty, Sts Cyril and Methodius University in Skopje, Republic of North Macedonia

Modern rapid urine drug testing kits sometimes provide false-positive results that may create differential diagnostic difficulties. A 29-year-old male patient was brought by ambulance to the University Clinic for Toxicology in Skopje, after acute poisoning with analgesic/antipyretic drugs (6 pills caffetin cold and 3 pills caffetin), 2 pills of Diazepam 2mg and 3 pills of Amlodipine 10mg, to calm the previous symptomatology of increased body temperature and increased heart rate. Last two years, the patient has been treated by a psychiatrist. He denies the use of any psychoactive substances.

After ingesting pills, he vomited and lost consciousness. On admission, the patient was conscious, contactable, blood pressure was 110/80 mmHg, body temperature was 37°C, with oxygen saturation on room air 97%. ECG with sinus rhythm HR=100/min, QRS=100 msec, QTc=360 msec, without other changes.

On admission, laboratory and toxicological analyses were performed. Rapid immunochromatographic tests in human urine were positive for opiates, amphetamines, caffeine. It was assumed that there is a possibility of a false positive test for opiates, due to codeine which is one of the ingredients of "Caffetin" drug; and false positive test for amphetamine, due to pseudoephedrine which is one of the ingredients of "Caffetin cold" drug.

Qualitative analysis was performed using gas chromatography/mass spectrometry (GC/MS) and liquid chromatography (HPLC), which confirmed the presence of caffeine, codeine, paracetamol, propyphenazone, pseudoephedrine, dextromethorphan, nordazepam, ramipril, amlodipine.

The patient was treated symptomatically, with a non-specific antidote of activated charcoal and discharged on the third day of hospitalization, in good general condition.

Conclusion: Commonly used medications can interact with enzyme immunoassay urine screening tests and result in false-positive results. If a false-positive urine screen result is suspected, nonimmunologic techniques, such as gas chromatography/mass spectrometry or high-performance liquid chromatography, are necessary for confirmation.

Keywords: codeine, pseudoephedrine, Gas Chromatography-Mass Spectrometry, Chromatography High Pressure Liquid