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LETTER TO THE EDITOR

“Crocodile” – new dangerous designer drug of abuse from the East

To the Editor:

We want to pay attention of clinical toxicologists to new dangerous designer drug, described as the “crocodile” or “Russian heroin,” which spreads and arouses concern in Europe.^{1,2} Because of there is lack of current scientific papers dealing with this problem, our aim is also to sum up information available mainly on the internet.

“Crocodile” is a street name of drug containing mainly desomorphine (Dihydrodesoxymorphine-D), produced in home conditions by simple synthesis from codeine, most often on the basis of codeine-containing medicines, in Russia available over-the-counter so far.^{1,3} Desomorphine presents sedative and analgesic effects; it is 8–15 times more potent than morphine, and has weaker toxic, convulsant, emetic and respiratory depression action.⁴ The drug is administered intravenously or intramuscularly. It has very fast onset of action (2–3 min) and a short duration of action (2 h). First symptoms of addiction usually appear after 5–10 days. From intake of the first dose, death comes maximally after 2–3 years, but even single dose may be lethal for predisposed person. High toxicity is caused by the presence of impurities. Skin in the places of injections becomes grey and green, scabrous, flakes off, so it resembles the skin of crocodile. Postproduction impurities (residues of acids and alkalis, petroleum derivatives, industrial oils, organic solvents, red phosphorus, iodine, heavy metals) act irritant on vessels which become damaged and afterwards obliterated. It causes peripheral limb ischemia with following necrosis, often secondarily infected, which require surgical intervention and even limb amputations. So this drug “bites” the limbs, as a real crocodile. Addicted people may be recognized by the smell of iodine, used during drug production. “Crocodile” generally is similar to so-called “Polish heroin” (“compote”)—drug produced also in home conditions from poppy straw, popular in Poland till the late 1990s.⁵

The “crocodile” is cheap (costs less than one can of bear), so it is very popular and is used mainly by poor opiate drug addicts in Russia. Its production developed at the time of restriction of heroin trafficking from Afghanistan. According to current estimates,

in Russia there are 100–250 thousands of people addicted to “crocodile.” About 30 thousands of people die per year. The presence of this drug was confirmed in Germany (among immigrants from Russia), Czech Republic, Ukraine, France, Belgium, Sweden and Norway. Unofficially, one fatal poisoning of 23-year-old man from Warsaw in Poland, in December 2011, is suspected, but we don’t know details yet, because of lasting investigation. With people migration, we should expect single cases of “crocodile” use in countries, where it is not present at this moment.

Russian authorities are going to restrict sale of medicines containing codeine from June 2012. There are already developed analytical methods for desomorphine determination in biological material for clinical and forensic purposes – HPLC, GC-MS, TLC, urine immunoassays (desomorphine is detected as an opiate).⁵ In all countries, the community and medical services have to be widely informed about consequences of taking of this dangerous drug of abuse.

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