

Three cases of nitazene detoxification: Clinical, analytical and toxicological aspects

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Background:

Recently, there has been a wave of deaths caused by opioids in the nitazene (benzimidazole) class in Norway. We report three patients admitted to detoxification centers following nitazene use, analytically confirmed in samples of urine, saliva, serum and hair.

Methods:

Patients were asked to provide samples during detoxification and follow-up, and gave informed consent. Samples were analyzed with a quantitative LC-MSMS method, developed for 18 different nitazene compounds.

Case reports:

Case 1. A 27-year-old male reported having ingested metonitazene orally during several months prior to admission. Metonitazene serum concentration was 5.3 nmol/L (2.0 ng/mL) on the day of admission, declining with a half-life of approx. 11 hours, still being detectable 2.5 days after. A 4 cm hair sample was collected 40 days after admission and cut into 2 x 2 cm segments before analysis. Metonitazene and the metabolite 4-hydroxy-nitazene were present in both segments.

Case 2. A 32-year-old male reported smoking of protonitazene prior to admission. However, N-desethyl-isotonitazene was instead detected in saliva, sampled 8 hours after the last reported intake. Serum sampled 13 hours after intake was negative.

Case 3. A 25-year-old male reported use of metonitazene until 2 days before admission, as well as bromazolam until the day of admission. Metonitazene and bromazolam were detected in urine, saliva and serum. Metonitazene concentrations were highest in saliva, followed by serum and urine.

Discussion:

We detected nitazenes in several different matrices in patients undergoing detoxification, including saliva and hair, which is not previously reported in the literature. Several interesting observations could be made: In case 1, the metonitazene half-life was surprisingly long. The concentration in serum at admission was of a magnitude reported in fatal intoxications, implying development of tolerance through prolonged use, consistent with the presence in a hair sample covering a period of 4 months. In case 2, the extremely potent N-desethyl-isotonitazene was found in saliva after the patient had been smoking what he presumed to be protonitazene. Case 3 revealed higher concentrations of metonitazene in saliva than in serum or urine. Further clinical, analytical and toxicological aspects will be presented at the conference.